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ABSTRACT

This publication is designed to aid school food service personnel in implementing effective food purchasing practices and obtaining optimum food quality. Part 1 outlines procedures for sound purchasing practices and presents suggested forms for use in implementing these procedures. Information is also provided on inventory systems and stock control. Part 2 presents suggested specifications for the purchase of selected food items used in child nutrition programs. The sections of part 2 are divided according to the meal components of the school lunch and breakfast programs. In addition, there is a section on other foods used in the preparation of lunches or breakfasts. The food items included are representative of school food purchases but are not all inclusive. Part 2 also gives buying tips, what to look for, and what to avoid in quantity purchasing of bread, cereal, milk, meat, and meat alternatives. Also included are tips for purchasing fresh and processed fruits and vegetables, as well as other foods used in school lunches and breakfasts. (Author/JG)

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Food Purchasing Pointers for School Food Service

United States Department of Agriculture
Food and Nutrition Service
Program Aid No. 1160

Food Purchasing Pointers for School Food Service

Prepared By:
Nutrition and Technical Services Staff
Food and Nutrition Service
U.S. Department of Agriculture

The following persons had major responsibility for this publication:
Joan Luck
Amelia Cazier
NTSS, FNS, USDA

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Introduction

1 Objectives and Explanation of Publication
1 Type A Lunch Pattern
1 The Type A School Lunch Guide to the Amounts of Food for Boys and Girls of Specified Ages
2 The Breakfast Pattern

Pointers for a Food Purchasing System

5 **Procedures for Food Purchasing**
5 Market Regulations-Laws, Standards, and Labels
6 Purchasing Policies and Ethics
6 Sources and Selection of Supply
6 Pre-Purchase Functions
8 Specifications and Market Orders
9 Purchasing Methods
9 Formal Purchasing
19 Informal Purchasing
19 **Inventory and Stock Control**
19 Inventories
19 Perpetual Inventory
21 Physical Inventory
21 Stock Control
27 **Centralizing the Purchasing Function**
27 Advantages of Centralized Purchasing
27 Disadvantages of Centralized Purchasing
28 Checklist for Evaluating the Purchasing System
Sample Forms
10 Market Order
13 Purchase Order
14 Bid Request for Frozen Fruits and Vegetables
16 Specifications for Frozen Fruits and Vegetables
17 Contract Award
18 Delivery Order
20 Quotation Record for Fresh Produce
22 Perpetual Inventory
23 Perpetual Inventory
24 Daily Issue Record

Food Purchasing Pointers for Selected Food Items

31 **Bread, Cereal, Milk**
31 General Information on Breads and Cereals
31 Bread and Bread Products
31 Cereals
35 General Information on Milk
39 **Meat and Meat Alternates**
39 General Information on Meats
42 Beef
46 Lamb
48 Liver
48 Pork
50 Sausage Products
54 Meat Food Products
55 General Information on Cheese
56 Cheese
59 General Information on Eggs and Egg Products
59 Fresh Shell Eggs
60 Egg Products
61 General Information on Poultry
63 Chicken
64 Turkey
65 Poultry Food Products
65 General Information on Seafood
67 Fish
69 Dry Beans and Peas
70 Peanut Butter
70 Enriched Macaroni Products with Fortified Protein

Appendix

125 Glossary of Terms
127 Meat Purchase Specifications
128 How to Contact USDA About Meat Acceptance Service
129 Beef Chart
130 Lamb Chart
131 Pork Chart
132 Veal Chart
133 Poultry and Egg Information
134 Dried Egg Products
135 Acceptable Bread and Bread Products
136 Bibliography

Introduction

Part 1

25 Physical Inventory
26 Receiving Record

Part 2

70 Textured Vegetable Protein Products
71 **Vegetables and Fruits**
71 General Information on Fresh Vegetables and Fruits
72 Monthly Availability of Fresh Vegetables and Fruits
73 Fresh Vegetables
78 Fresh Fruits
81 General Information on Processed Vegetables and Fruits
87 Canned Vegetables
94 Canned Fruits
101 Frozen Vegetables
105 Frozen Fruits
107 Dehydrated Vegetables
108 Dehydrated Fruits
111 **Other Foods**
111 General Information on Other Foods
111 Catsup, Chili Sauce, Mustard, and Vinegar
111 Cereal Products
112 Dairy Products
114 Fats and Oils
116 Flavorings
116 Flour
117 Herbs and Spices
119 Nuts
119 Pickle Products
120 Salad Dressings
120 Sugar, Syrup, and Honey
121 Miscellaneous Products

Appendix

Introduction

The goal of school food service is to serve nutritious, attractive, and moderately priced meals. Meals that meet these standards are the result of effective planning and management that range from menu planning, purchasing, preparation, and serving to the final phase of clean-up. The meals served can be no better than the quality of food purchased. Wise purchasing practices help upgrade the quality of food served, increase participation, reduce waste, and control costs. This publication, to be used in conjunction with PA-270, "Food Buying Guide for Type A School Lunches," has been prepared for school food service personnel as a guide for implementing effective purchasing practices and obtaining optimum food quality.

Objective and Explanation of Publication

The objective of this publication is to provide procedures for a food purchasing system and information for purchasing foods in quantity. This publication is divided into two parts.

Part I outlines procedures for sound purchasing practices and gives suggested forms for use in implementing these procedures. Information is also provided on inventory systems and stock control.

Part 2 gives suggested specifications for the purchase of selected food items used in Child Nutrition Programs. The sections of Part 2 are divided according to the meal components of the school lunch and breakfast programs. In addition there is a section on other foods used in the preparation of lunches or breakfasts. The food items included in this publication are representative of school food service purchases but are not all inclusive.

Part 2 also gives buying tips, what to look for, and what to avoid in quantity purchasing of bread, cereal, milk, meat and meat alternates. Included in this part are explanations of the U.S. Department of Agriculture's (USDA) Acceptance Service, the Institutional Meat Purchasing Specifications Series (IMPS), and the poultry inspection and grading service, along with illustrations of inspection and grading marks or shields. Also included are tips for purchasing fresh and processed fruits and vegetables as well as other foods used in school lunch and breakfast.

The Type A Lunch Pattern

The Type A Pattern is a guide to well-balanced lunches. It is designed as an aid for planning lunches that will help meet the children's nutritional needs. As specified in the National School Lunch Regulations, a Type A lunch shall contain as a minimum each of the following food components in the amounts indicated.

Meat and Meat Alternate

Two ounces (edible portion as served) of lean meat, poultry or fish; or 2 ounces of cheese; or 1 egg; or 1/2 cup of cooked dry beans or dry peas; or 4 tablespoons of peanut butter; or an equivalent of any combination of the above-listed foods. To be counted in meeting this requirement, these foods must be served in a main dish or in a main dish and one other menu item.

The Type A School Lunch
Guide to the Amounts of Food for Boys and Girls of Specified Ages

Pattern	*Pre-school children (3 up to 6 years)*	*Elementary school children 6 up to 10 years*	*10 up to 12 years*	*Secondary schools boys and girls (12 up to 18 years)* [1]
Meat and/or alternate:			(Type A lunch)	
One of the following or combinations to give equivalent quantities:				
Meat, poultry, fish	1 1/2 ounces	2 ounces	2 ounces	3 ounces
Cheese	1 1/2 ounces	2 ounces	2 ounces	3 ounces
Egg [2]	1	1	1	1
Cooked dry beans and peas	1/4 cup	1/3 cup	1/2 cup	3/4 to 1 1/4 cups
Peanut butter	2 tablespoons	3 tablespoons	4 tablespoons	4 to 5 tablespoons
Vegetable and/or fruit [3]	1/2 cup	3/4 cup	3/4 cup	1 to 1 1/2 cups
Bread [4]	1/2 slice	1 slice	1 slice	1 to 3 slices
Milk	3/4 cup [5]	1/2 pint	1/2 pint	1/2 pint

[1] When a range in amounts is given, the smaller amounts are suggested for girls and the larger amounts for older boys. An amount midway between the amounts shown is suggested for younger boys.

[2] When egg is served as the main dish in the lunch, use in addition a half portion of meat or other meat alternate for all children except those 3 up to 6 years.

[3] Must include at least two kinds.

[4] Or a serving of cornbread, biscuits, rolls, muffins, etc., made of whole-grain or enriched meal or flour.

[5] If this is impractical, serve 1/2 pint.

Remember: The amounts of foods for all age groups, except 10 up to 12 years, are intended as guides and their literal use is not mandatory.

Vegetables and Fruits
Three-fourths cup serving consisting of two or more vegetables or fruits or both. A serving (1/4 cup or more) of full strength vegetable or fruit juice may be counted to meet not more than 1/4 cup of this requirement.

Bread
One slice of whole-grain or enriched bread; or a serving of other bread such as cornbread, biscuits, rolls, muffins, made of whole-grain or enriched meal or flour.

Fluid Milk
One-half pint of fluid milk as a beverage.

When these foods are used in the amounts specified and in combination with other foods needed to satisfy appetites, the lunches will make a significant contribution toward achieving the Recommended Dietary Allowances established by the National Academy of Sciences, National Research Council for 10- to 12-year-old boys and girls.

To meet younger children's lesser nutritional needs, the regulations permit serving these children lesser amounts of selected foods than are specified above. To meet the increased nutritional needs of teenagers, the regulations encourage serving older boys and girls larger amounts of selected foods than are specified in the Type A lunch requirements.

The Breakfast Pattern

The three-component breakfast pattern will provide children with a good start toward meeting their daily nutritional needs. As specified in the School Breakfast Regulations, a school breakfast shall contain as a minimum each of the following food components in amounts indicated.

Fruit or Vegetable or Fruit or Vegetable Juice
One-half cup serving of fruit or vegetable or full-strength fruit or vegetable juice.

Bread or Cereal
One slice of whole-grain or enriched bread or one serving of other bread such as cornbread, biscuits, rolls, muffins made of whole-grain or enriched meal or flour.
Or
Three-fouth cup serving of whole-grain cereal or enriched or fortified cereal.
Or
An equivalent quantity of a combination of bread and cereal.

Fluid Milk
One-half pint served as a beverage or on cereal or used in part for each purpose.

To improve the nutrition of participating children include additional foods as often as practical:

Meat and Meat Alternate
One egg; or a 1-ounce serving of meat, poultry, fish; or 1 ounce of cheese; or 2 tablespoons of peanut butter or an equivalent quantity of these foods.

Other Foods
Selected items such as bacon; and spreads such as butter, fortified margarine, jam, jelly, etc.

FOOD PURCHASING POINTERS

for

School Food Service

Pointers for a Food Purchasing System

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6 Pre-Purchase Functions
8 Specifications and Market Orders
9 Purchasing Methods
9 Formal Purchasing
19 Informal Purchasing
19 **Inventory and Stock Control**
19 Inventories
19 Perpetual Inventory
21 Physical Inventory
21 Stock Control
27 **Centralizing the Purchasing Function**
27 Advantages of Centralized Purchasing
27 Disadvantages of Centralized Purchasing
28 Checklist for Evaluating the Purchasing System
Sample Forms
10 Market Order
13 Purchase Order
14 Bid Request for Frozen Fruits and Vegetables
16 Specifications for Frozen Fruits and Vegetables
17 Contract Award
18 Delivery Order
20 Quotation Record for Fresh Produce
22 Perpetual Inventory
23 Perpetual Inventory
24 Daily Issue Record
25 Physical Inventory
26 Receiving Record

Procedures for Food Purchasing

Since a very large part of the school food service dollar is spent for food purchases, careful management of this function is essential. A good buyer purchases the right product in the right amount at the right time at the best value giving price. This means knowing where, what, how, when, and how much to buy. Properly organized purchasing procedures will save time, eliminate chance of error, and ensure delivery of foods at the right place at the right time.

Market Regulations—Laws, Standards, and Labels

Since the early days of this century, food laws have helped ensure wholesome unadulterated food. The chief purposes of the food laws are to:

- Ensure real food value.
- Maintain integrity of foods.
- Protect quality and quantity of all basic food.
- Protect the health of the buyer.
- Promote honesty.
- Provide informative labeling.

In 1906 *The Meat Inspection Act* authorized sanitary control and the establishment of standards of composition and labeling requirements for meat and meat products moving in interstate commerce.

Requirements include the name of the product, the minimum amount of meat that shall be used, and limits on selected ingredients such as fat, cereal, and other extenders. The act was amended in 1967 by the Wholesome Meat Act to require States to set up meat inspection systems equal to the Federal programs.

The act also mandated that:

- Standards of identity which specify the kinds and proportions of ingredients in a product be established.
- Meat and meat products be clean, wholesome, free from disease, free from adulteration, and truthfully labeled.
- "Official establishments" where meat products are slaughtered and processed be inspected to assure that animals are free from disease and that products are packed under sanitary conditions.

The *Pure Food, Drug and Cosmetic Act*, enacted in 1938 and amended in 1958, did the following:

- Prohibited the shipment of interstate commerce of misbranded food products. A food is misbranded if its labeling is false or misleading.
- Prohibited the shipment in interstate commerce of adulterated food products. A food is adulterated if it contains any harmful substances that make it injurious to health.
- Established definitions and standards of identity, standards of quality, and standards of fill of containers for foods, whenever such action will promote honesty and fair dealing.

In 1959 *The Poultry Products Inspection Act* was passed. This Act requires:

- Fresh and frozen ready-to-cook poultry, canned poultry, and canned and frozen poultry products with 2 percent or more of cooked poultry meat to be inspected for wholesomeness by the Animal and Plant Health Inspection Service, U.S. Department of Agriculture, if sold in interstate or foreign commerce. The act was amended in 1968 to require States to set up poultry inspection programs equal to the Federal programs.
- The official mark of inspection to appear either on the immediate container in which fresh or frozen poultry is shipped or on the shipping container.

These basic acts are amended as market conditions change and new foods or forms of foods become available.

Food Standards

Most food standards are regulated by the Food and Drug Administration, of the Department of Health, Education and Welfare, and are used as a guide by food manufacturers to ensure the quantity and quality of all food. These standards include the following:

- Standards of Identity describe the nature and character of a given item and specify the kinds and amount of ingredients that must go into a product. The standard of identity for a specific food tells what is in it, how it is made, how the product looks and sets limits, such as fat and moisture content.
- Standards of Fill regulate the quantity of the food in the container. They tell the packer how full the container must be to avoid deceiving the buyer. In general, standards of fill require packages to contain the maximum quantity of food that can be sealed in the container and processed without damaging the food. These standards apply to products that may shake down or settle after filling, or, those which are made up of a number of units or pieces packed in a liquid. Standards of fill or container have been established for most canned fruits and vegetables, tomato products, and shellfish.
- Quality Standards apply chiefly to canned fruits and vegetables and describe the ingredients which go into the product. These standards limit and describe the number and kinds of defects permitted. They do not provide a basis for comparing foods as grades do, but establish minimum quality requirements.

Meat and poultry product standards are regulated by the Animal and Plant Health Inspection Service, USDA and are used as guide by manufacturers of these foods to ensure the proper quality. Standards of content pertain to meat products containing 3 percent or more of *raw* meat and poultry products containing 2 percent or more *cooked* poultry.

Food Labeling Requirements

Labeling requirements made mandatory by the Pure Food, Drug and Cosmetic Act are: the common or

usual names of all ingredients, listed in descending order of their predominance by weight; the name and address of the manufacturer, packer, or distributor; the statement of the quantity of the contents in weight, measure, or numerical count; and the name of the artificial flavoring, coloring, or chemical preservative. Descriptive labeling such as brand names, recipes, or number of servings may be added voluntarily by processors.

Label requirements mandated by the Meat Inspection Act and Poultry Products Act are: the product's name (common, usual, or descriptive), net weight, name of packer or distributor, ingredients listed in descending order, and the inspection mark. Other label information such as recipes, number of servings, and the like may be added voluntarily.

While nutrient information is not usually included on labels of food packed in institutional size containers, this information can be requested and obtained by the buyer from the packer or processor.

Purchasing Policies and Ethics

Restrictions and qualifications placed on the selections of vendors will naturally vary from one school system to another, but certain criteria can be used as a guide in selecting sources of supply. These criteria include:

- Past record of vendor's performance.
- References from satisfied customers.
- Bidding records of vendor.
- Performance bond.
- Inspection of vendor's plant or facilities.

A strict code of business ethics is necessary when purchasing foods for school food service. Mutual respect, integrity, and honesty are needed between the buyer and the vendor. Never compromise freedom of action by becoming obligated to any one vendor. Be courteous and fair at all times. There must be give and take between the buyer and supplier.

Adhere to an established appointment schedule by limiting the time spent with an individual salesman. Compare not only price and quality of the merchandise offered by various vendors, but also the dependability and service provided. Do not discuss one vendor's prices and information with another vendor. Conduct business affairs in a dignified and ethical manner. Be objective when making the final decision on food purchases.

Sources and Selection of Supply

The selection of sources of supply will often be determined by school board policies and by State and local laws and regulations. Be knowledgeable of these policies and codes and of their effect on the purchasing procedure. A supplier should not be issued an invitation to bid unless the school board is willing to issue him a contract.

Supply sources may include wholesalers, institutional suppliers, salespersons of manufacturers of food products, jobbers, brokers, and cooperatives. The choice among suppliers, as well as the number of firms in each of the preceeding categories, varies according to the location of the school system. The choice is widest for locations near large urban areas. Some suppliers provide almost a complete line of products, while others specialize in one or a few products. If possible, several sources of supply should be identified for all food items to be purchased.

The individual responsible for purchasing food for school food service must be a well-informed manager who:

- Becomes familiar with sources of supply.
- Knows food suppliers and what they can be depended upon to supply.
- Keeps up-to-date on:
  - The kinds of food each vendor supplies.
  - Minimum and maximum size orders each vendor will accept.
  - Credit policy.
  - Discount offered, if any.
  - Delivery policy and schedule.
  - Seasonal availability.
- Has a list of bidding records of responsive vendors. The information includes:
  - Name, address, and telephone number of firm.
  - Item sold.
  - Discount terms.
  - Bid proposal number and date.
  - Response on bids.
  - Dependability in meeting deliveries.
- Tells vendors what is expected and advises them of purchasing policies.

Vendors have a responsibility to the food service operator. They should understand the needs of the school food service and be able to provide the service required. Vendors should:

- Comply with contract terms.
- Supply grade certificates.
- Deliver products which meet specifications outlined by the buyer.
- Offer good delivery service.
- Make deliveries when and where agreed.
- Maintain sanitary facilities.
- Be honest and dependable.

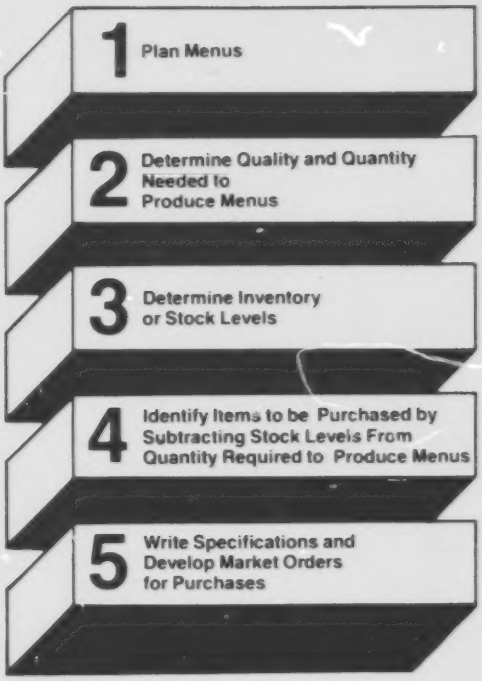
Pre-Purchase Functions

The planned menu is the starting point in the decision of what and how much to purchase. Systematic planning ensures sufficient food for the anticipated number of children to be served each day. Figure 1 outlines the steps in preparing for purchasing from menu planning to initiating the purchases. These steps include the following.

- Plan menus. Thoughtful planning of menus for a designated time period (from a month to 6 weeks) coordinated with the purchase schedule helps assure economy in purchasing, a good variety of foods, and effective use of facilities, personnel time,

Pre-Purchase Functions

Figure 1



and skills. "A Menu Planning Guide for Type A School Lunches," PA-719, and "School Breakfast Menu Planning Guide," FNS-7, are useful tools for systematic menu planning. Recipes for production of menus should be selected when menus are planned. "Quantity Recipes for Type A School Lunches," PA-631, is a good source for standardized recipes.

- Determine quality of foods needed according to how the food is to be used in the menu. To help determine the quality of food needed for production, refer to Section II of this publication.
- Determine quantity of foods required to prepare the number of servings of each item on the menu. Refer to the standardized recipes to be used in food production. Standardized recipes, such as those in "Quantity Recipes for Type A School Lunches," PA-631, state the quantities of food required to produce a specified number of portions. Records of past usage may also be used to estimate quantities needed. If a menu choice is offered, an estimated number of portions required for each menu choice can be determined from records of past selections made by students.

The appropriate serving sizes for 10- to 12-year-old boys and girls are stated in the Type A Pattern. Servings may be adjusted for both younger and older children to meet their food needs. The Guide to the Amounts of Food for Boys and Girls of Specified Ages on page 1 can be helpful in determining quantities of food to purchase when planning for a school population of different ages. "Food Buying Guide for Type A School Lunches," PA-270, gives information on the quantities of food needed to meet meal pattern requirements. Quantities of food needed are used both for preparing the market orders for food to be purchased and in requisitioning daily requirements from the storeroom.

- Determine inventory and stock levels on hand and identify items requiring purchase. See pages 19, 21, and 27 for information on inventory procedures. Be sure to check the food in the refrigerator, freezer, and dry storage area in the kitchen as well as the storeroom. Subtract the stock level from the quantity required to produce the menu to determine the quantity to be included on the market order for purchase.

Specifications and Market Orders

To get the best quality food products, use written specifications describing the food to be purchased. Types of specifications commonly used are description by trade or brand name and identification by standards known to the food industry (U.S. Grades).

A specification can be brief or elaborate. The Agricultural Marketing Service, USDA, has acceptance services that, upon request, will assist in writing specifications that are suitable for an individual school or school systems. For more information on the USDA's Acceptance Services, see the appendix, page 128.

A good specification should be:

- Clear and simple, and yet so specific that both buyer and bidder can unquestionably identify all provisions required.
- Identifiable with products or grades currently on the market.
- Capable of being checked by label statements, USDA grades, weight determination, etc.
- Fair to seller and protective to the buyer.
- Capable of being met by several bidders for sake of competition.

Contents of Specifications

A specification tells the vendor what the buyer wants. Copies of all specifications should be given to and discussed with the vendor so that there is no misunderstanding about the products to be delivered. Since specifications inform the vendor exactly what is wanted, they are a means of resolving differences if products delivered are not satisfactory. All specifications should include the following:

- Name of product (trade or brand), or standard.
- Federal grade, brand, or other quality designation.
- Size of container (weight, can size, etc.).
- Count per container or approximate number per pound (number of pieces in container, where applicable).
- Unit on which price will be based.

Any other information which helps to describe the condition of the product to be delivered should be included as appropriate.

- Canned Goods: Type or style, pack, sirup density, size, specific gravity.
- Meats and Meat Products: Age, exact cutting instructions, weight range, composition, condition upon receipt of product, fat content, cut of meat to be used, market class.
- Fresh Fruits and Vegetables: Variety, weight, degree of ripeness or maturity, geographical origin.
- Frozen Foods: Temperature during delivery and upon receipt, variety, sugar ratio.
- Dairy Products: Temperature during delivery and upon receipt, milk fat content, milk solids, and bacteria content.

Market Orders

Market orders are used as a basis for stating quantities of food to be purchased. They should accompany the quality specifications. Along with the quality specifications, they are used as the basis for the purchase order and bid request issued by the purchasing agent. In most centralized school food service departments, the school food service supervisor is responsible for the budget for purchases and providing all market orders to the purchasing official. Market orders from individual

schools are sent to the office of the food service supervisor and orders for purchases are compiled from these requests. Hence, the market orders originating in individual schools do not necessarily require specifications, since the quality is determined at a central point and is uniform throughout the system. A suggested form for a market order is presented on page 10.

Purchasing Methods

An organized and efficient purchasing procedure is an important aspect of food service and is essential for good management of the food service program. The responsibility for the actual purchase of food may be delegated to a purchasing agent. However, the school food service supervisor or manager should be responsible for determining the quality, quantity, performance, and usage of each product and should provide the purchasing agent with these criteria.

To purchase wisely, the food service supervisor or manager should:

- Carry out all the pre-purchase functions. See pages 6 and 8.
- Request U.S. Grade Certification for appropriate items.
- Inspect and approve samples.
- Establish an order and delivery system.
- Examine new products that become available on the market in relation to cost, acceptability, and nutritional contribution.

In most instances a purchasing agent has certain assigned duties. These responsibilities include:

- Preparing purchase orders.
- Obtaining prices.
- Accepting bids.
- Awarding contracts based on the recommendations of the food service supervisor or manager.
- Maintaining vendor relations.
- Adjusting and settling complaints.

In some schools the food service supervisor or manager may also assume some of the responsibilities of the purchasing agent. Most schools, even those with centralized purchasing, consider it desirable for the school food service supervisor or manager to be involved in purchasing all foods.

The method to be used in making a purchase is one of the most important decisions in the purchase function. Purchases may be carried out by formal or informal methods. The flow chart (Figure 2) on page 11 outlines the two methods for purchasing foods. Regardless of the method used, two or more vendors should be contacted when making most food purchases to insure competitive bidding. Once the bidder is selected, a contract is formulated between the vendor, to supply the food or service, and the school food service authority, to provide the payment to the vendor for the food or service provided.

Purchasing by bid is recommended for all staples and nonperishable foods, nonfood supplies, and any item purchased by standing order (such as milk). Perishable foods are usually obtained under a more informal system. A master purchasing and delivery timetable should be determined. The frequency of buying depends on the proximity of the vendor to the school and thus the delivery time, the capacity and type of storage facilities available to the school, volume of purchases in relationship to the price paid, as well as the perishability or shelf life of the food itself.

The following timetable may be used as a guide for a bid schedule.

Foods	*Delivery*	*Bid Period*
Milk, Ice Cream	Daily Twice Weekly	Annually
Bakery Products	Daily As Required	Annually
Canned Foods	Monthly Bimonthly	Annually Semiannually
Staple Groceries	Monthly Bimonthly	Annually Semiannually
Meat and Poultry	Daily Twice Weekly Weekly	Quarterly Bimonthly Monthly
Frozen Foods	Daily Twice Weekly Weekly	Quarterly Monthly

Note: Frequent deliveries may increase the price on items.

Formal Purchasing

Formal purchasing is the procedure of submitting written specifications and quantity needs to vendors to obtain the advantage of volume buying. A notice of requirements is sent to vendors inviting them to submit bids. In inviting bids, it is important to give complete specifications for each item, the purchase unit, and the quantity required. In addition, terms of delivery and of payment should be specified. Formal purchasing results in a contract and should contain all the essentials of a contract. To be valid and enforceable, a contract must contain four basic elements: (1) agreement ("meeting of minds") resulting from an offer and acceptance; (2) consideration or obligation; (3) competent (responsible) parties; and (4) a lawful purpose. All contracts should be dated to indicate when the contractual relationship begins.

A system for formal purchases is essential. The system may include the components discussed below.

1. *Develop Purchase Orders.* The purchase order specifies the quantity of each item needed for the bid period. Purchase orders must include the name of the organization, the individual making the request, and the signature of the person officially

Market Order

School _____ Date Ordered _____

Order No. _____

Manager's Signature _____ Filled By _____

Date Filled _____

Instruction for Completing Orders

1. *School Food Service Supervisor/Manager fills in columns 2 and 3.*
2. *Order by unit such as pound, case.*
3. *Retain one copy for your records. ____ copies should be completed.*
4. *Columns 1, 5, 6 and 7 will be filled in at central warehouse or central storage point when items are dispensed.*

1 Stock no.	2 Specification	3 Unit	4 Quantity ordered	5 Quantity distributed	6 Unit price	7 Total amount

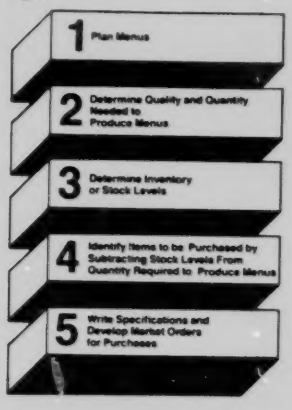
Total Value _____

Authorized By _____
School Food Service Supervisor

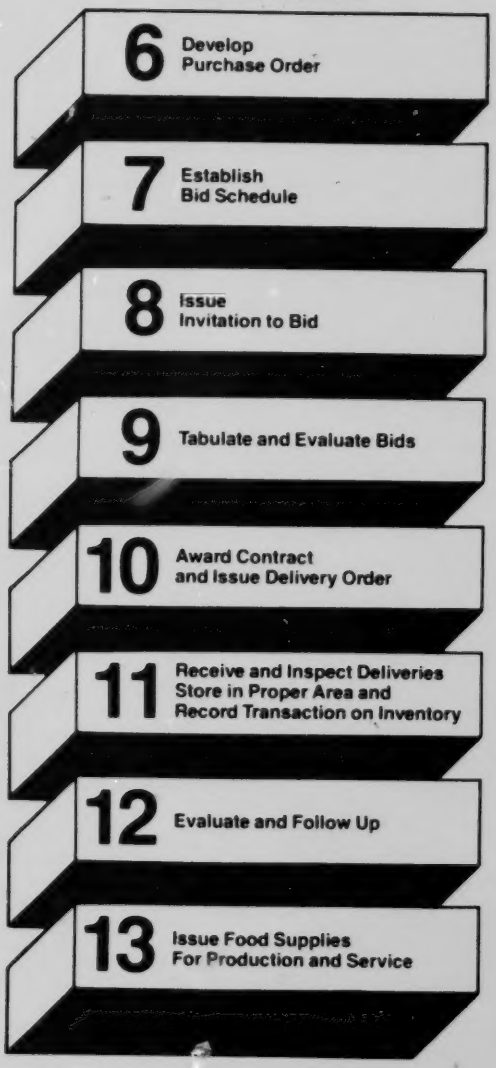
Received By _____ Date _____
Purchasing Agent

Purchase Methods
Figure 2

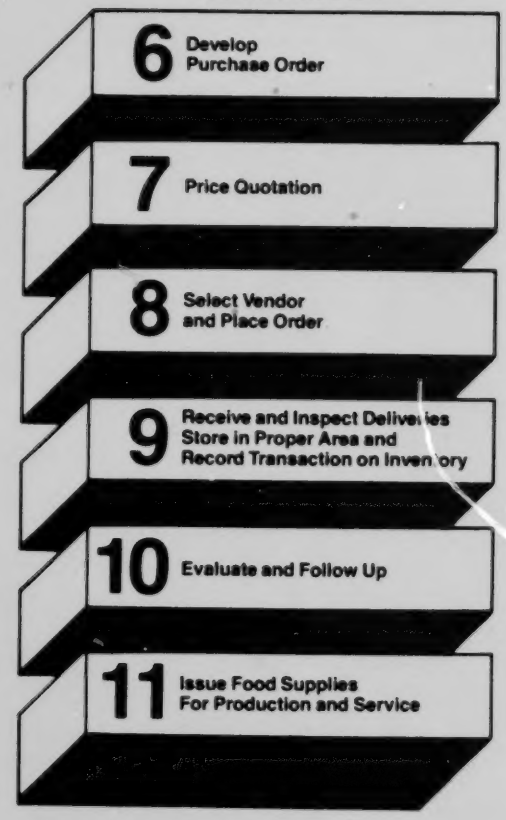
Pre-Purchase Functions
Figure 1



Formal Method



Informal Method



authorized to sign the order, as well as the quantity, quality specifications for each item, and required date of delivery. Purchase order forms may be prenumbered or the number may be added at the time of final approval, but a number, as well the date of issue, is essential for identification. A suggested purchase order form is presented on page 13.

2. *Establish a Bid Schedule.* A bid schedule is a timetable outlining bid period and delivery frequency. Once the purchase order and specifications have been developed allow at least 2 weeks for vendors to submit bids and at least another week for product samples to be tested. A formal contract award may require approval by the school board adding another 2 or 3 weeks to the schedule, depending on the frequency of their meetings. The total time required for the submission of bids and awarding the contract may be from 4 to 8 weeks. Bid periods should be planned to take advantage of new packs of processed fruits and vegetables usually available in October and January.

3. *Issue Invitation to Bid or Bid Request.* An invitation to bid provides the commercial community (vendors) an opportunity to submit bids for specific items advertised. Bid requests originate at the system or district level or at a central purchase point. A bid request contains two parts: general conditions and purchase specifications. See sample bid form on page 14.

4. *Tabulate and Evaluate Bids.* Bids should be kept sealed and confidential until the designated time for opening. Sealed envelopes containing the bids should be stamped to indicate the date, time, and place of receipt. Special colored and marked envelopes are recommended for each individual item being bid so that all bids for that product can be opened at the same time. The bids should be placed in a locked receptacle until the time specified for opening. A bidder may wish to change his quotation before the bids are closed. If this occurs, there should be no objection on the part of the purchasing officer. Bids received after the time and date specified for bid opening must be rejected. Late bids may be returned unopened to the bidder.

5. *Carefully Evaluate the Product Bid with the Specification Required.* Remember, the cost of an item "as purchased" is not always the significant cost. The cost of the item "as served" or "as used" is the determining factor. Some evaluation methods commonly used in food service are: can-cuttings, product testing in schools or test kitchens, general acceptance of the group using the product, and scientific laboratory tests. Closely related to evaluation of a product is a grade certificate which identifies the quality of the product at the time of inspection. These certificates must be supplied by the bidder and shall indicate grade or grade points.

The opening and tabulation of bids should be under the control of an appropriate official. The quotations and contents of bids should be open to the public. Bids should, in most cases, be read aloud for the benefit of those present. The forms on which bids are tabulated should be designed so as to furnish the reviewer with all pertinent information quickly. Every tabulation should be prepared with the following in mind: ease of review, clarity, ready comparison, and space for notations.

Tie bids and low bids should be carefully examined. In most instances public purchasing laws specify that the award be made to the lowest responsible bidder. It is wise to consider the following before accepting bids:

- Ability and capacity of the bidder to perform the contract and provide the service.
- Ability of the bidder to provide the service promptly and within the time specified without delay or interference.
- Character, integrity, reputation, judgment, experience, and efficiency of the bidder.
- Quality of bidder's performance on previous contracts or services.
- Bidder's previous compliance with laws and with specifications relating to contracts or service.
- Sufficiency of bidder's financial resources.

When the award is not given to the lowest bidder, a full and complete statement of the reasons should be prepared and filed with other papers relating to the transaction. The school food service department should be the judge of merit on all products.

6. *Award Contract.* The contract should be awarded to the most responsive and responsible bidder with the price most advantageous to the purchaser. When a contract is issued it represents the legal acceptance of the offer made by the successful bidder and it is binding. A suggested form for contract award is given on page 17. All bidders, both successful and unsuccessful, should be notified of action. School food service supervisors and managers should receive a copy of the contract award and specifications. The general conditions of the contract should include services rendered, dates, method of deliveries, inspection requests, grade certificates required, procedure for substitutions, and conditions for payment. The following information should also be provided: name and address of the school, a contract number, type of items the contract covers, contract period, date of contract issue, point of delivery, quantities to be purchased, and the signature of an authorized representative of the firm submitting the bid.

7. *Issue Delivery Orders.* A delivery order is an order placed against the contract. A suggested delivery order form is shown on page 18.

8. *Receive and Inspect Deliveries.* Once purchases are delivered, they should be inspected, entered on the inventory records, and stored properly. A discussion of receiving methods, inventory and stock control is presented on pages 19, 21, and 27 of this publication.

9. *Evaluate and Follow-Up.* Provision should be

Purchase Order

Name of School _____

Date _____

_____
Address

Purchase Order # _____
(Please refer to above number on all invoices)

_____
Address

Requisition No. _____

Department _____

Date Required _____

To _____

_____

_____

_____

Instruction for Completing Order. Prepare in triplicate for the vendor, business office, and the school food service supervisor/manager.

Shipped to: _____ FOB _____ Via _____ Terms _____

Unit	Total Quantity	Specification	Price per unit	Total cost

Approved by _____

Bid Request for Frozen Fruits and Vegetables

Issued By _____ Date _____

_____ Date to be Delivered _____

Address _____

_____

Bid Request for _____

Notice is hereby given that the Board of Education of _____ County, _____ State (hereinafter referred to as the Board) requests written and sealed bids on the following items to be submitted to said Board on or before 10:30 a.m. on _____, 19__ and on each subsequent bidding period date indicated in the bid specifications. Sealed bids will not be opened until 10:30 a.m. _____, 19__ if the outside is marked: Do not open until _____. Respond on attached bid form.

Contract Period: The bid covers the period from date of award through _____, 19__, inclusive and vendors receiving awards shall be the sole suppliers to all schools for items for the period.

Samples: Bidders will be required to submit samples of the items bid upon. Samples are to be furnished without cost to _____ and are to be sent to _____ on _____ by _____.

Quality: Successful bidders must furnish United States Department of Agriculture Grade Certificates indicating each fruit and vegetable item to be U.S. Grade __.

Grade Certificates: A U.S. Grade Certificate shall be submitted for required items prior to delivery. These certificates must cover the specific brand name of items being delivered. The code numbers on the item being delivered shall be the same as the codes listed on the certificate.

Estimated Quantities: Quantities indicated on Bid Proposal Forms are estimated total requirements based on anticipated use. They will provide the basis for determining the total low bid complying with specifications for each group of items and are submitted as information.

Actual Quantities: Quantities on attached Bid Sheet are estimated to cover the period from date of award to _____, 19__, inclusive. The School Food Service Department will furnish the successful bidder with actual quantities as are needed. Purchaser guarantees to purchase during contract period only, the actual requirements needed.

Delivery (Equipment): Carrier shall utilize only properly insulated, mechanical or thermostatic temperature control refrigeration equipment. Such equipment must be capable of maintaining temperature to protect the product. All products must be delivered in a hard frozen state, 0°F. or below.

The Board of Public Education reserves the right to reject the use of any equipment by a carrier if it is not in a clean, sanitary condition and suitable for hauling of all goods.

Each carrier shall furnish a Certificate of Insurance issued by an insurance company showing that the Board of Public Education will be protected from loss or damage to property of third persons or to the carriers' own property, loss or damage to Board of Public Education commodities, and injury or death to third persons or to the carrier's employees. Carrier will assume full common liability for all shipments.

Orders: All orders will be placed directly with awardees by telephone by the individual qualified purchasing official who in some cases may be the individual lunchroom manager. They may order fractional cases. Regular orders should be placed at least seventy-two (72) hours (3 work days) before the delivery time requested; but each emergency order should be filled within two (2) hours after the order is placed. ALL VENDORS MUST SUBMIT SEPARATE DELIVERY TICKETS AND/OR INVOICES FOR NONBID ITEMS.

Deliveries: Deliveries shall be made to the receiving area of individual schools between the hours of 7:00 a.m. and 2:15 p.m. These deliveries must be made in mechanically refrigerated trucks maintaining a temperature below freezing at all times.

Invoices & Statements: Invoices for the purchases of food and miscellaneous supplies made by schools are paid by the central accounting department. In order to facilitate the handling of these invoices, ALL VENDORS MUST ADHERE TO THE FOLLOWING INSTRUCTIONS:

Code number for each school listed on each invoice. (A list of schools with code number is attached.)

All items on delivery tickets MUST be billed according to description of item quoted on bid. Unit prices for all items shall be recorded and invoices shall be accurately extended. SEPARATE DELIVERY TICKETS AND/OR INVOICES SHALL BE MADE FOR ALL NONBID ITEMS.

All vendors must issue delivery tickets and credit memos in QUADRUPLICATE, and all four (4) copies must be signed by qualified purchasing official.

2 copies (original and 1 carbon) left with proper person at time of delivery.

2 copies to be returned to vendor.

The vendor shall forward as per attached list, weekly statements, with one signed delivery ticket attached, directly to the School Food Service Department.

All delivery tickets supporting weekly statements must be in exact agreement with copy of delivery tickets left with manager. If for any reason it is necessary to make a change on the delivery ticket, MAKE AN ADDITIONAL CHARGE OR CREDIT MEMO.

All cancellations or merchandise returns must be recorded by driver on all FOUR COPIES of delivery tickets, or "pick-up tickets."

2 copies left with manager at time of pick-up.

2 copies to be returned to vendor.

Do not mail statement to individual schools.

A monthly statement for each school should be sent to the official responsible for paying bills by the 10th working day or by the 10th calendar day of every month, following date of purchase.

Specifications For Frozen Fruits and Vegetables

Bid Form

Name of School District _____ Date _____

Item no.	Quantity	Unit size	Item and specification	Brand quoted	Quantity quoted	Unit price	Total price

Contract Award

Board of Education or School _____ Contract Award No. _____

_____ Date Awarded _____
Address

_____ Date Bid Opened _____

This is a notice of the acceptance of Bid #_____ for the period of _____, 19___ to _____, 19_____.

Delivery
Delivery is to be made in two shipments: Week of _____ and _____ between _____ a.m. and _____ p.m.

Notice to Contractors:
This notice of award is an order to ship. Orders against contract are listed by _____ and invoices shall be rendered direct to the _____. The price basis, unless otherwise noted, _____ includes delivery and transportation charges fully prepaid F.O.B. agency. No extra charge to be made for packing or packages.

Names and Addresses of Successful Bidders

Offer
In compliance with the above award, and subject to all terms and conditions listed on the Bid Request, the undersigned offers and agrees to sell to _____ the items listed on the attached schedule.

Bidder _____

_____
Address

By _____
Signature of person authorized to sign this contract

Title _____

Accepted as to items numbered _____ Accepted by _____

By _____ Date _____

Title _____

Delivery Order

Delivered to: _____ Date _____
School or Warehouse

_____
Address

Delivered from: _____
Processor

_____
Address

Delivered by: _____
Vendor

_____
Address

Code no.	Quantity	Item	Unit price	Total price

made for schools to feed back information to the central office as to the quality of the products purchased and the supplier's performance. Schools should report to the proper official any deficiencies and irregularities, such as delayed deliveries, shortages, and damaged merchandise. Evaluation of products purchased is essential during issuance and use of food in the production and service of meals. It should be noted that in food service some discrepancies may not be detected until the item is in use; for example, excessive bones, over and above what is allowable in specifications for "boneless" fish. In such cases, arrangements may be made for a price adjustment, restitution, or return of the remaining merchandise.

Techniques Used In Formal Purchasing

The techniques most commonly used in the purchase of foods in the formal method are Blanket Purchase Arrangements, Requirements Contract, and Fixed Price Contract.

The Blanket Purchase Arrangement (BPA) is an arrangement with vendors or dealers to furnish on a "charge account" basis such supplies as may be ordered during a stated period of time. This arrangement is used, generally, when a wide variety of items are purchased from local suppliers, but the exact items, quantities, and delivery requirements are not known in advance and may vary considerably. The BPA is designed to reduce the amount of documentation desired. BPA's should be established with more than one vendor so that delivery orders can be placed with the firm offering the best price.

The Requirements Contract provides for filling all actual purchase requirements of specific foods during a specified contract period with deliveries to be scheduled by the timely placement of orders. The Requirements Contract is used for procurements where it is impossible to determine, in advance, the precise quantities of the commodities that will be required. The contract should state, when feasible, the maximum limit of the vendor's obligation to deliver and an appropriate provision limiting the buyer's obligation to order.

A Firm Fixed Price (FFP) Contract provides for a price which is not subject to any adjustment by reason of the cost experience of the vendor in the performance of the contract. This places maximum risk on the vendor. The FFP contract is used in procurements when reasonably definite specifications are available and whenever fair and reasonable prices can be established at the outset.

Informal Purchasing

The use of informal quotations should comply with the essential steps used in more formal purchasing or bid buying when possible. Informal bidding is often used when time is a very important factor. Generally, a small list of suppliers is preselected. Price quotations and orders may be made by telephone or personal contact with a salesperson. If possible, at least two or more prices should be obtained. Informal quotations have little legal protection. The buyer usually accepts what is available. Often, State or local laws determine conditions under which informal quotations can be used. It is important that all records and work papers of an informal quotation be retained. All quoted prices should be recorded and written confirmation should be requested. The sample quotation sheet on page 20 is one way records can be kept when an informal system of purchasing perishables is used.

Purchasing under the informal method is usually practiced when the following circumstances exists.

- The amount of a purchase is so small that time required for formal purchasing practices cannot be justified.
- An item can be obtained only from one source of supply.
- Ordering is done on catalog information and catalog prices and institutional discounts are known.
- A need is urgent and immediate delivery is required.
- The stability of market (and prices) is uncertain.

Inventory and Stock Control

The objectives of inventory and stock control are to prevent shortages, purchase food at minimum cost, minimize food losses, keep inventories at the minimum point consistent with food production requirements, and develop meaningful cost analysis. Management of inventories may be controlled centrally or under the direct supervision of each food service manager. Food inventories represent an important asset of school food service. Food supplies should be as carefully controlled as program income. A good rule is to guard all materials during receiving, storage, issue, and production in the same way that money is guarded and handled in the operation.

Inventories

There are two inventory methods, perpetual and physical, to determine stock status or levels of each item on hand. Records of these inventories can be used in purchasing to determine re-order points, in controlling the usage, and in analyzing the consumption of food items.

Perpetual Inventory

Perpetual inventory means keeping a *continuing record* of food purchased, in storage, and used. If kept up-to-date, this type of inventory record provides the following information on each item at a glance: the date of purchase, the vendor, the brand purchased, the price paid, what has been requisitioned from the storeroom, and the amount on hand. These inventory records are recommended

Quotation Record for Fresh Produce

Name of School _____

Date to be Used _____

Delivery Date _____

Circle accepted price quotation.

Item	Specifications	Amount needed	Amount on hand	Amount to order	Price quotations			
					Vendors			
					1	2	3	4

for all items except perishable foods which are delivered and stored in the production area. A physical inventory taken at regular intervals is more realistic for perishables.

The perpetual inventory serves not only as a guide for purchasing food but also as a check on irregularities such as pilferage or displacement of stock. It also provides useful information on fast-moving items, slow-moving items, or unusable items. Standard forms for perpetual inventory are available from suppliers, or the food service manager may design forms that are best for an individual food service operation. The suggested form on pages 22 and 23 may be helpful in designing forms. As transactions occur, record data on the perpetual inventory. The perpetual inventory requires time and strict supervision to be an effective tool.

Remember: Perpetual inventory records should be checked against the actual count of items in the storeroom periodically. The frequency should be that which offers the best control for the school. The comparison of perpetual inventory records with actual physical inventory will show discrepancy between written records and actual stock. It may also show that there should be tighter controls on the storeroom. If a perpetual inventory is not feasible, keep a daily storeroom issue record. A suggested form for this simplified record is on page 24.

Physical Inventory

A periodic physical count (inventory) of all items in the storeroom is necessary. This is an actual count of all items. A physical inventory should be taken of all perishable items such as milk, fruits and vegetables, bakery products, etc., before writing market orders. The physical inventory shows what is actually on the shelf or in stock at a given time whereas the perpetual inventory alerts the manager to definite changes in the flow of items from the time of purchase until use. The physical inventory is a necessity in every food service operation. It can provide a basis for ordering food and a means for verifying the accuracy of the perpetual inventory.

The storeroom or storage areas, as well as the freezers and refrigerators should be organized with inventory recording in mind:

- Keep food of one kind together.
- Keep areas in an orderly manner.
- Label "empty" and "full" weight on each container or drum used to store products such as flour, cornmeal, and sugar.
- Record date food is received. Use food on a first in (received) first out (used) basis.

A well designed form will help make the job of taking the physical inventory easier. A suggested form is on page 25.

Stock Control

Good stock control procedures and records are important for controlling actual stock, purchasing new stock efficiently, and for cost analysis. To insure good control of food, set up a procedure or a system for receiving, storing, and dispensing foods.

At time of delivery:

- Check food (perishable foods first) against quotation sheet or purchase order.
- Count, measure or weigh each item. Scales should be standard equipment in every receiving area.
- Inspect and check each item for quality. Determine if specifications or standards are satisfied.
- Check invoice for price. Does the unit price agree with the purchase order? Check to see if extensions are correct.
- Sign the delivery slip from the vendor only after making sure all goods ordered are received. Record weight, count, and quantity.
- Record information about quality. See suggested form on page 26.
- Post receipt of food items on perpetual inventory.

Store all food in the appropriate area if not intended for immediate use. Nonperishable foods and staples, including sugars, cereal products, dried fruits and vegetables, condiments, spices, and canned goods, should be stored in well ventilated, temperature controlled areas at temperatures of 50° to 70°F. A reliable thermometer is a must for all storage areas. Record the thermometer reading at least once a day at approximately the same time to keep check on temperature in storage areas and to determine when corrective actions are needed. "Food Storage Guide for Schools and Institutions," PA–403, provides detailed information on proper storage of foods, including times, temperatures, and storeroom organization.

Perishable foods such as meats, poultry, fish, dairy products, eggs, fresh fruits and vegetables, and frozen foods should be stored immediately to preserve their quality and nutritive value. These foods should be kept in the appropriate storage climates no longer than the recommended time.

All refrigerators and freezers should be equipped with thermometers, preferably the recording type. Record the temperature of refrigerators and freezers daily at approximately the same time. Such records can point out faulty equipment, overloaded equipment and loss of power, etc. Prompt action can result in saving food as well as money. The temperatures of this equipment should be within the following ranges.

Refrigeration	36° to 45° F
Freezer	0° F or below

Records of food received must be kept. The following are some records that are commonly used:

- A merchandise receipt which shows the quantity (cases, pounds, units, etc.) actually delivered, what

Perpetual Inventory

Item _____

Vendors

1. _____ 4. _____

2. _____ 5. _____

3. _____ 6. _____

Order Record				Received		Cost	
Date	Vendor no.	Order no.	Quantity	Date	Quantity	Invoice amount	Unit cost

Item _____

Monthly consumption

Year	19	19	19	19	19
Jan.					
Feb.					
Mar.					
Apr.					
May					
June					
July					
Aug.					
Sept.					
Oct.					
Nov.					
Dec.					
Total					

Perpetual Inventory

Disbursements and Receipts

Date	Order no. or Requisition no.	Quantity in	Quantity out	Quantity on hand	Date	Order no. or Requisition no.	Quantity in	Quantity out	Quantity on hand

Specification No. or Description of Item _____ Maximum on Hand _____

Minimum on Hand _____

Number: _____ Item: _____ Unit: _____ Storeroom Location: Section _____ Aisle _____ Bin _____

Sample Form

Daily Issue Record

Date _____

Quantity	Unit	Description of item	Issued to:	Unit price	Total cost	Issued by

Physical Inventory

Food Item and Description	Amount on Hand				
	Unit	Date _____	Date _____	Date _____	Date _____

Receiving Record

Date _____

Quantity	Unit	Description of item	Name of vendor	Inspected and quantity verified by	Unit price	Total cost	Distribution	
							To kitchen	To store room

the items were, and how the food was distributed.
- A daily receiving record kept when there is separate storage for food supplies. This form can also be used to indicate items rejected and returned to the vendor. The form on page 26 is one method of keeping this record.
- A copy of the purchase order showing "quantity ordered" blanked out and an extra column added at the side for "quantity received" can be used to verify quantities of food ordered. This procedure can insure an independent check, which is important to cost control, if an employee or manager who is not responsible for ordering the food checks in the purchases. When this *blind system* is used, the person receiving the supplies should have a copy of the vendor's invoice with the "quantity ordered" column blanked out.

A system for dispensing food and supplies from the storeroom should be developed and followed.
- Keep storeroom locked at all times.
- Set a time for dispensing supplies for each day's use.
- Designate one person to obtain supplies from the storeroom.
- Keep a perpetual inventory of food issued from the storeroom each day.

Essentials for a good inventory and stock system are:
- Designate one person to be responsible.
- Plan and organize the warehouse or storeroom adequately, carefully, and completely.
- Provide for a periodic check of the physical count against the perpetual records.
- Tie in the evaluation of the perpetual inventory records with the accounting records and financial reports.
- Periodically review the system itself—the procedures, techniques, objectives, and accomplishments—from the standpoint of good accounting and value as well as good operational practice.
- House and store inventory records properly.

Centralizing the Purchasing Function

The trend in food service purchasing is definitely toward centralization, as a more efficient and effective system of purchasing. Volume purchase usually offer a cost savings over purchases made by individual schools. Centralization permits a number of schools to pool their requirements and to obtain more economical prices through competitive bids. Recent studies show that cooperative purchasing organizations can range from a very informal organization consisting of two or more schools or school districts desiring to purchase a single item on a voluntary basis to very formal organization desiring to make large purchases of many items.

The advantages of centralized purchasing may outweigh the disadvantages in many situations. However, this method of purchasing may not be practical for all schools. The advantages and the situations should be studied carefully when deciding on whether or not to use this system.

Advantages of Centralized Purchasing

- Authority and responsibility for the purchasing function are coordinated at one point.
- Purchases can be made on a planned and coordinated basis.
- Volume buying may minimize unit costs.
- A greater degree of standardization may be achieved in specifications which provide for uniform quality, less variety of materials, and fewer inventory items.
- Quality and quantity of products are controlled throughout the school system.
- Discount savings may be more readily available.
- Budget and fiscal control are centralized.
- Less capital per school may be tied up in inventories.
- Save time of manager by eliminating need for sales representatives to call at each school.
- Effective purchasing tools, such as the USDA Meat and Poultry Acceptance Services, can be used to good advantage.

Disadvantages of Centralized Purchasing

- It may not be practical across large geographic areas.
- Products must be the type and quality accepted by all schools.
- Excessive paperwork may result.
- Friction between the purchasing department and the school food service department may develop over authority for decisionmaking.

Central storage is almost a must when centralized purchasing is practiced. To be effective, proper and adequate storage facilities must be available and inventory controls must be implemented. Central storage offers certain advantages such as:
- A large supply may be purchased at one time.
- Cost may be stabilized over a period of time.
- Deliveries to schools can be regulated.
- Items may be evaluated prior to use.

The limitations of centralized storage include:
- The initial funds for establishing and operating a central warehouse must be available.
- Sophisticated procedures must be implemented.
- Funds must be available for maintaining inventory and stock control.
- Additional funds are required for delivery of supplies from central warehouse to individual schools.

The decision to use a centralized method of purchasing must be the decision of the individual school or district. The pros and cons should be carefully analyzed before arriving at the final decision.

Checklist for Evaluating the Purchasing System

Listed below are 15 questions to help evaluate the purchasing system in use. "No" answers indicate that practices need assessing, reevaluating, and, perhaps changing to improve the current system.

1. Are menus planned in advance? (At least 1 month)	Yes No
2. Are purchases made according to specific needs of the menus?	Yes No
3. Are specifications and market orders written describing the food quality and quantity best suited for menu needs?	Yes No
4. Does the purchaser keep up-to-date on changes in food quality, packaging, and new products?	Yes No
5. Are new products obtained in small quantities and evaluated before including them on menus and purchasing in large quantity?	Yes No
6. Does the purchaser make good use of seasonal foods and food in plentiful supply on local markets?	Yes No
7. Does the purchaser buy products because they meet menu needs or because of the brand name or vendor?	Yes No
8. Has a realistic bid schedule been established?	Yes No
9. Are personal gifts, premiums, etc., refused?	Yes No
10. Are foods inspected for quality and quantity when they are received?	Yes No
11. Are all foods stored promptly once they are delivered?	Yes No
12. Has an efficient method been established for accounting for purchases?	Yes No
13. Are inventory records kept up to date?	Yes No
14. Are perpetual inventories checked periodically with physical inventories?	Yes No
15. Has a method been established for reevaluation of products during the production and service phase of the food operation, and is this information provided to the menu planner?	Yes No

Part 2 Food Purchasing Pointers for Selected Items

Food Purchasing Pointers for Selected Food Items

31 **Bread, Cereal, Milk**
31 General Information on Breads and Cereals
31 Bread and Bread Products
31 Cereals
35 General Information on Milk
39 **Meat and Meat Alternates**
39 General Information on Meats
42 Beef
46 Lamb
48 Liver
48 Pork
50 Sausage Products
54 Meat Food Products
55 General Information on Cheese
56 Cheese
59 General Information on Eggs and Egg Products
59 Fresh Shell Eggs
60 Egg Products
61 General Information on Poultry
63 Chicken
64 Turkey
65 Poultry Food Products
65 General Information on Seafood
67 Fish
69 Dry Beans and Peas
70 Peanut Butter
70 Enriched Macaroni Products with Fortified Protein
70 Textured Vegetable Protein Products
71 **Vegetables and Fruits**
71 General Information on Fresh Vegetables and Fruits
72 Monthly Availability of Fresh Vegetables and Fruits
73 Fresh Vegetables
78 Fresh Fruits
81 General Information on Processed Vegetables and Fruits
87 Canned Vegetables
94 Canned Fruits
101 Frozen Vegetables
105 Frozen Fruits
107 Dehydrated Vegetables
108 Dehydrated Fruits
111 **Other Foods**
111 General Information on Other Foods
111 Catsup, Chili Sauce, Mustard, and Vinegar
111 Cereal Products
112 Dairy Products
114 Fats and Oils
116 Flavorings
116 Flour
117 Herbs and Spices
119 Nuts
119 Pickle Products
120 Salad Dressings
120 Sugar, Syrup, and Honey
121 Miscellaneous Products

General Information on Breads and Cereals

Bread and Bread Products

Many schools purchase bread and rolls. Standards should be established for these products as well as for other items purchased. Bread and rolls should be specified as having crusts that are uniform in color and thickness. The color of the crust should be golden brown. The interior crumb should be clear white or slightly creamy. A grayish cast denotes inferior flour or poor processing. The crumb should have a soft sheen, and when a slice is held up to the light, it should be semi-translucent. The texture of the grain should be soft and velvety, with no large holes; and the consistency of the grain should be soft and delicate. The ingredients used should be flour, shortening, water, milk or buttermilk, sugar, salt, and yeast. The type of flour and the proportions will vary according to the variety of bread. The bread should come wrapped. Standard slices are $^3/_8$-inch thick, but slices may be varied upward to $^5/_8$-inch thick, if desired. Sandwich slices should be approximately $4^1/_2$ by $4^1/_2$ by $^1/_4$ inches to $^1/_2$ inches thick. When purchasing, as much variety as possible should be sought in bread. Avoid monotony and increase consumption by offering different types of bread.

Loaves such as round top, split top, twin and twists are available. Hearth-type loaves are available such as Italian hard loaves, Vienna, French, braided and cottage or round baked loaves. Vienna and Italian bread and rolls are sometimes called hard breads because they are baked in ovens in which steam is introduced during baking to form a hard, crispy crust on the bread. Sourdough breads are those having a small portion of over-fermented bread dough added to a normal dough. Pumpernickel may be a sourdough. Boston brown bread is a steamed mixture of wheat flour, cornmeal, and rye flour combined with molasses, milk, and salt. Soda and baking powder are the leavening agents. Raisins may be added. Various ethnic breads such as Syrian breads, pilot bread, bagels, fry bread, tortillas, and hush puppies are acceptable bread items for school food service if they are made of whole grain or enriched meal or flour.

There are also many roll shapes, such as pan, parkerhouse (also called pocketbook), finger rolls, napkins rolls, and twists. Sweet dough, containing eggs and higher quantities of sugar and fat than regular dough, is used to make cinnamon rolls, raisin buns, coffee cakes, pecan rolls, danish pastry, and a host of other products.

In 1974 USDA issued guidelines for bread-type items to be credited as bread equivalents in meeting the bread requirement of meals in Child Nutrition Programs. Criteria and guidelines for creditable items were established for products produced commercially in terms of approximate weight and serving size. The guide lines are reproduced on page 135 of the appendix of this publication. Remember: To be credited as bread equivalents all items must be made of whole grain or enriched meal or flour and conform to serving size and weight as stated in the guidelines.

Cereals

There are several types of breakfast cereal available to the school food service buyer. They are ready-to-eat (prepared), uncooked, partially-cooked and instant cereals. All cereals used in school food service should be enriched or whole grain. Breakfast cereals, both ready-to-eat and cooked, are easy to serve, nutritious, popular with children and usually good buys. Although many ready-to-eat cereals are available pre-sweetened, consider the purchase of unsweetened cereals as they are a better buy and are equally nutritious. Most prepared cereals are highly enriched or fortified with B vitamins, iron, and sometimes with other nutrients.

Bread, White, Enriched

Purchase Units:
1- or $1^1/_2$-pound loaf
2-or-3-pound loaf (sandwich bread)

Ingredients: White bread must be made of flour, shortening, sugar, yeast, salt, and water, plus optional ingredients.

Finished Product: White bread must contain 62 percent total solids.

Enrichment: Each pound of finished product must contain the following nutrients to be labeled "Enriched" Bread:

1.1–1.8 mg–thiamin
0.7–1.6 mg–riboflavin
10.0–15.0 mg–niacin
8.0–12.5 mg–iron

Always buy enriched bread.

Consider: The nutritional value of the formula to be used. For example, enriched bread labeled "Milk Bread" made with milk solids makes a greater nutritional contribution than enriched white bread.

Note: Request and study the formula of the product being purchased.

Federal Standards of Identity: Code of Federal Regulations, 21, Food and Drugs, Parts: 17.2 and 17.3

Bread, Wheat

Purchase Units: 1-, 2-, or 3-pound loaf

Ingredients: Wheat bread must be made of flour (both whole wheat and white in varying amounts), shortening, sugar, yeast, salt, and water plus optional ingredients.

Enrichment: Each pound of finished product must contain the following nutrients to be labeled "Enriched Bread":

1.1–1.8 mg–thiamin
0.7–1.6 mg–riboflavin
10.0–15.0 mg–niacin
8.0–12.5 mg–iron

Always buy enriched wheat bread.

Note: Request and study the formula of the product being purchased.

Bread, Raisin

Purchase Units: 1- or 2-pound loaf

Ingredients: Raisin bread must be made of flour, shortening, sugar, yeast, salt, water, raisins plus optional ingredients.

Finished Product: Raisin bread may be frosted or iced.

Enrichment: Each pound of white flour used in the preparation of enriched raisin bread must contain:

2.9 mg–thiamin
1.8 mg–riboflavin
24.0 mg–niacin
16.5 mg–iron

Always buy enriched raisin bread.

Raisin breads or breads containing fruit or nuts should be specified as having not less than 50 parts seeded raisins, fruits, or nuts for each 100 parts of flour used. Water extract of raisins may be used but not to replace raisins.

Federal Standards of Identity: Code of Federal Regulations, 21, Food and Drugs, Parts: 17.1, 17.2, 17.4

Rolls, Buns

Purchase Units: Dozen

Ingredients: Rolls are made from the specific yeast doughs of the breads described on page 31. Optional ingredients may be added.

Sweet dough, containing eggs and higher quantities of sugar and fat than regular dough, may be used to make various styles of white rolls, raisin buns, cinnamon rolls, and other products.

Always buy enriched rolls.

Note: Request and study the formula of the product being purchased.

Federal Standards of Identity: Code of Federal Regulations, 21, Food and Drugs, Parts: 17.2, 17.3, 17.4

Crackers

Soda
Saltines

Purchase Units:
Pound box
Case, 6 1-pound boxes per case
Box, individual cellophane packages of 2 to 4 crackers. 280 to 500 packages per box.

Ingredients: Crackers are made from enriched flour, shortening, malt, salt, and leavening.

Always buy crackers made from enriched flour.

Dry Prepared Breakfast Cereal

Bran flakes

Purchase Units:
Bowl packs: 48 individual bowl packages per case.
Individual boxes: 50 or 100 individual boxes per case

Ingredients: Bran flakes are manufactured in a manner similar to wheat flakes but contain 25 to 40 percent bran. A paste of wheat bran and flour from soft white or red winter wheat is extruded through plates in making bran. It is then toasted. If bran flakes contain raisins, the raisins should be of the seedless type, pliable, meaty, well-developed, of good color and reasonably uniform size.

Dry Prepared Breakfast Cereal

Cornflakes

Purchase Units:
Bowl packs: 48 individual bowl packages per case.
Individual boxes: 50 or 100 individual boxes per case

Ingredients: Cornflakes are made from a cooked paste of pearled hominy, malt, sugar, salt and other seasoning. The paste, partially dried, is made into flakes and toasted. Cornflakes may or may not be sugar coated.

Many other breakfast cereals are made from corn, i.e., puffed corn and shredded corn.

Dry Prepared Breakfast Cereal

Malted wheat cereal granules

Purchase Units:
Bowl packs: 48 individual bowl packages per case.
Individual boxes: 50 or 100 individual boxes per case

Ingredients: Malted cereal granules are made from wheat flour flavored heavily with malt and shaped into loaves and then slightly fermented. The loaf is baked until toasted. After cooling, the loaf is ground into granule form.

Dry Prepared Breakfast Cereal

Puffed rice

Purchase Units:
Bowl packs: 48 individual bowl packages per case.
Individual boxes: 50 or 100 individual boxes per case

Ingredients: Puffed rice is made from cleaned polished rice under heavy pressure. The sudden release of pressure forces out the cellular walls puffing up the rice. The grain size is increased to eight times its original size. The finished product should have a good color, a light porous texture, and good flavor. Rice flakes and shredded rice biscuits are also found on the market.

Rice cereals are available unsweetened or sweetened. Other flavoring such as chocolate may be added.

Dry Prepared Breakfast Cereal

Puffed wheat

Purchase Units:
Bowl packs: 48 individual bowl packages per case.
Individual boxes: 50 or 100 individual boxes per case

Ingredients: Puffed wheat is processed in the same way as puffed rice. (See rice). The grains should be individual, porous, and uniform. Expansion should be eight times normal kernel size.

Dry Prepared Breakfast Cereal

Shredded wheat

Purchase Units:
Bowl packs: 48 individual bowl packages per case.
Individual boxes: 50 or 100 individual boxes per case.

Ingredients: Shredded wheat is made from soft wheat. Seasonings and flour are formed into a paste and cooked. The product is sent through a shredding machine. The shreds are formed into a loose biscuit and baked. Baking should be even and the color golden brown. Large biscuits should weight not less than 1/2 ounce each or more than 1 ounce each. Small biscuits should number 28 to 70 to the ounce. The biscuits should be crisp, porous, and friable. They should contain no hard particles. Some biscuits may be circular shape. Biscuits made from pressed flakes may also be obtained.

Dry Prepared Breakfast Cereal

Wheat flakes

Purchase Units:
Bowl packs: 48 individual bowl packages per case.
Individual boxes: 50 or 100 individual boxes per case

Ingredients: Wheat flakes are made from soft white or red winter wheat. A heavy paste is made, flavored, cooked, partially dried, then flaked and toasted. Toasting should be even and the color a golden brown. Malted wheat flakes are flavored with malt.

Cornmeal

Purchase Units:
5-pound bags
8 per case, or
25-pound bags.

Ingredients: Cornmeal is made by grinding clean white or yellow corn to a fineness specified by Federal Standards. It contains a small amount of fat and fiber and not more than 15 percent moisture. Regular cornmeal contains most of the corn and has a fat content over 3.5 percent. Degermed cornmeal has a fat content under 2.25 percent.

Enrichment: Enriched cornmeal contains added vitamins and minerals per pound as follows:

2.0 mg–3.0 mg–thiamin
1.2 mg–1.8 mg–riboflavin
16 mg–24 mg–niacin
21 mg–26 mg–iron

Always buy enriched cornmeal.

Federal Standards of Identity: Code of Federal Regulations, 21, Food and Drugs, Parts: 15.000, 15.501, 15.502, 15.503, 15.513

Grits, Corn

Purchase Units: 40-ounce packages, 12 per case

Ingredients: Corn grits are prepared by grinding

and sifting white or yellow cornmeal from which the bran and the germ have been removed. They may be obtained in three sizes—coarse, medium, and fine. However they are coarser then cornmeal.

Enrichment: The minimum levels of enrichment per pound are:

2.0 mg–3.0 mg–thiamin
1.2 mg–1.8 mg–riboflavin
16 mg–24 mg–niacin
13 mg–26 mg–iron

Federal Standards of Identity: Code of Federal Regulations, 21, Food and Drugs, Parts: 15.510, 15.511, 15.514

Farina

Purchase Units:
28-ounce packages, 12 per case, or
5-pound packages, 6 per case.

Ingredients: Farina, a meal, is made like flour from the inner portion of the wheat kernel called the endosperm. It is milled to a granular rather than a smooth or floury consistency. When whole wheat farina is made, some or all of the bran is left on. Some whole wheat farinas may also contain the germ. Malted cereals are largely farina flavored with malts and other flavoring ingreidents.

Enrichment: Enrichment levels per pound are:

2.0 mg–2.5 mg–thiamin
1.2 mg–1.5 mg–riboflavin
16.0 mg–20.0 mg–niacin
not less than 13 mg–iron

Federal Standards of Identity: Code of Federal Regulations, 21, Food and Drugs, Part: 15.140

Oats, Rolled

Purchase Units:
3-pound boxes, 8 per case, or
42-ounce packages, 8 per case.

Ingredients: Rolled oats are made by rolling oats, with outer husk removed, into flakes. Regular and quick cooking oats differ in the thinness of flakes. Extra steam treatment at time of processing results in quick-cooking oatmeal.

The product should have bright uniform creamy color. The flavor should be the natural flavor of the oats and free from rancid, bitter or undesirable flavors or odors.

Remember: Rolled oats are considered a whole-grain cereal.

Note: Rolled oats are available in the following forms; long cooking; quick cooking and instant, both sweetened and flavored.

Rice

Purchase Units:
Pound
5-, 10-, 25-, and 50-pound sacks

Types: Types of rice include long, medium, and short grain.

Grades: U.S. Grade #2 is suggested for school lunch.

Forms: Forms of processed rice are:

Milled white rice—deficient in B-vitamins and some minerals.

Brown or husked rice—contains more protein, vitamins, and minerals.

Parboiled or converted rice—regular white rice treated to retain the B-vitamins of rough rice. Parboiling is done before the hull is removed.

Enrichment: Enriched rice—milled white rice enriched with the following minerals and vitamins per pound:

2.0 mg–4.0 mg–thiamin
16 mg–32 mg–niacin
13 mg–26 mg–iron

Precooked rice has been partially cooked before packaging.

Buy enriched rice, parboiled or converted rice.

Federal Standards of Identity: Code of Federal Regulations, 21, Food and Drugs, Part: 15.525

Formulated Grain-Fruit Product

Purchase Units: Individually wrapped portion

Formulated Grain-Fruit Products may be used as an alternate to meet the bread/cereal and fruit juice requirement of the School Breakfast Program if the product:

1. Meets specifications defined by USDA in the Federal Register, March 27, 1974.

2. Is served in combination with one-half pint of fluid milk.

3. Is individually wrapped and labeled as follows, "This product conforms to USDA Child Nutrition Programs specification. It meets the breakfast requirements when served with 1/2 pint of milk."

Recommended Points for Specifications:
The product is accepted by FNS/USDA for use in Child Nutrition Programs.

The product meets specifications defined in the Federal Register, March 27, 1974.

The product is labeled as required by FNS/USDA.

Note: A listing of acceptable grain-fruit products is available through the State Agencies or FNS Regional Offices.

General Information on Milk

The importance of dairy products as human food, their high perishability, and their susceptibility to contamination from bacteria and undesirable flavors have made it necessary to provide controls for their processing. Most States and local governments have regulatory provisions for the production and marketing of dairy products. The U.S. Public Health Service's Milk Ordinance and Code is used as a model for fluid milk and milk products in most State and local codes. This code sets requirements for the producton of raw milk and its subsequent handling. The milk must be properly cooled. Upon receipt at the dairy it is examined for temperature, odor, quality, and milk fat. It is then pasteurized and rapidly cooled. Pasteurization destroys pathogenic bacteria and most all of the common bacteria found in milk. Most fluid milk is homogenized. This divides the fat globules so that they remain as a permanent emulsion in the milk.

Standards have been set by the Federal, State, or local governments for milk and milk products on the market to guarantee quality and wholesomeness. A form of fluid milk (whole, skim, low fat, buttermilk, and flavored milks made from these forms of milk) must be served as a beverage with every Type A school lunch, and in the school breakfast and special milk programs. In addition, other types of milk, such as nonfat dry milk or evaporated milk, can be used in cooking.

Checklist for Writing Milk Specifications

Due to varying conditions that exist in each school, milk specifications must be drawn to meet the individual needs. The following items provide a checklist for those involved in writing specifications. Individual needs or situations may require additions or deletions from this suggested list.

1. Type of product—homogenized milk, chocolate milk, lowfat, skim, buttermilk, and flavored milks.
2. Minimum fat content in milk, if a product is desired much above the legal State standard.
3. Specify that lowfat, skim, or flavored milks made from the forms of milk be fortified with vitamins A and D at levels specified by the Food and Drug Administration and consistent with State and local standards.
4. Size of individual container—one-half pints, quarts, bulk dispensor, etc.
5. Type of package or container—paper, plastic, etc.
6. Quantity or number of units per day.
7. Period of time covered, such as September 1 to December 31.
8. Dates when delivery is not needed—holidays, weekends, etc.
9. Frequency of delivery—daily, twice a week, etc.
10. Time of delivery—mornings, afternoons, between 8 and 10 a.m., etc.
11. Place of delivery—in refrigerators or milk coolers.
12. Conditions for adjusting or canceling order due to changes in school schedule or other emergencies.

Milk, Fluid Whole

Purchase Units: 1/2-pint cartons

Description: To meet Food and Drug Standards of Identity, fluid whole milk shall contain not less than 8.25 percent milk solids and not less than 3.25 percent milk fat. Milk must be pasteurized and may be homogenized. The additions of vitamins A and D are optional.

Note: Milk sold interstate or intrastate shall meet the State standards for milk solids and milk fat content.

Recommended Points for Specifications:
Whole milk that meets State, local, and/or Federal specifications.

Pasteurized and homogenized whole milk.

Federal Standards of Identity: Code of Federal Regulations, 21, Food and Drugs, Part: 18.2

Milk, Fluid Whole, Flavored

Purchase Units: 1/2-pint cartons

Description: Chocolate and other flavorings are added to fluid whole milk to produce flavorful and appetizing milk beverages. When added to fluid whole milk, the product is chocolate milk, etc.

Note: Milk sold interstate or intrastate shall meet the State standards for milk solids and milk fat content.

Recommended Points for Specifications:
Whole milk that meets State, local, and/or Federal specifications.

Pasteurized and homogenized whole milk.

Federal Standards of Identity: Code of Federal Regulations, 21, Food and Drugs, Part: 18.2

Milk, Lowfat

Purchase Units: 1/2-pint cartons

Description: To meet Food and Drug Standards of Identity lowfat milk shall contain not less than 8.25 percent milk solids not fat, and not less than 0.5 or more than 2.0 percent milk fat. Milk must be pasteurized and homogenized. Vitamin A must be present in such quantitites that each quart contains 2,000 International Units. The addition of vitamin D is optional.

Note: Lowfat milk sold interstate or intrastate shall meet the State standards for milk solids and milk fat content. Vitamin fortification must meet State and local standards.

Recommended Points for Specifications:
Lowfat milk that meets State, local, and/or Federal specifications.

Pasteurized and homogenized lowfat milk.

USDA recommends that lowfat milk contain at least the minimum fortification of vitamins A and D as authorized by State and local standards.

Federal Standards of Identity: Code of Federal Regulations, 21, Food and Drugs, Part: 18.10

Milk, Lowfat, Buttermilk

Purchase Units: 1/2-pint cartons

Description: Cultured buttermilk is characterized by its viscous body and its slight acid, aromatic flavor. It is produced by adding specific bacteria to skim milk under controlled conditions to produce the partial coagulation of the milk protein and its characteristic flavor. In some areas of the country, small butter granules are added to the product.

There are no Federal standards for buttermilk. Most States have established standards for the milk solids, not fat of buttermilk. These standards range from 9.0 to 8.0 percent.

Recommended Points for Specifications:
Buttermilk that meets State and local standards.

Pasteurized milk.

Milk, Lowfat, Flavored

Purchase Units: 1/2-pint cartons

Description: To meet Food and Drug Standards of Identity lowfat milk shall contain not less than 8.25 percent milk solids not fat, and not less than 0.5 or more than 2.0 percent milk fat. Milk must be pasteurized and homogenized. Vitamin A must be present in such quantitites that each quart contain 2,000 International Units. The addition of vitamin D is optional. To produce flavored lowfat milk, natural and artificial food flavoring are added.

Note: To be used in Child Nutrition Programs flavored lowfat milk must meet State, local, and/or Federal standards for the fluid milk from which they are made.

Recommended Points for Specifications:
Lowfat milk that meets State, local, and/or Federal specifications.

Product's label must meet FDA's standards for labeing.

Pasteurized and homogenized lowfat milk.

USDA recommends that lowfat milk contain at least the minimum fortification of vitamins A and D as authorized by State and local standards.

Federal Standards of Identity: Code of Federal Regulations, 21, Food and Drugs, Part: 18.10

Milk, Skim

Purchase Units: 1/2-pint cartons

Description: To meet Food and Drug Standards of Identity skim milk shall contain not less than 8.25 percent milk solids and less than 0.5 percent milk fat. Vitamin A must be present in such quantitites that 1 quart contain 2,000 International Units. Addition of vitamin D is optional.

Note: Skim milk sold intrastate may meet State standards for milk solids and milk fat content. Vitamin fortification must meet State and local standards.

Recommended Points for Specifications:
Skim milk that meets State, local, and/or Federal specifications.

Pasteurized and homogenized skim milk.

The USDA recommends that skim milk contain at least the minimum fortification of vitamins A and D as authorized by State and local standards. Nonfat milk solids may or may not be added.

Federal Standards of Identity: Code of Federal Regulations, 21, Food and Drugs, Part: 18.20

Milk, Skim, Flavored

Purchase Units: 1/2-pint cartons

Description: To meet Food and Drug Standards of Identity skim milk shall contain not less than 8.25 percent milk solids and less than 0.5 percent milk fat. Vitamin A must be present in such quantitites that 1 quart contain 2,000 International Units. Addition of vitamin D is optional.

To produce flavored skim milk natural and artificial food flavorings are added.

Note: To be used in Child Nutrition Programs flavored milk must meet State, local, and/or Federal standards for the fluid milk from which they are made.

Recommended Points for Specifications:
Skim milk that meets State, local, and/or Federal specifications.

Pasteurized and homogenized skim milk.

Federal Standards of Identity: Code of Federal Regulations, 21, Food and Drugs, Part: 18.20

General Information on Meats

The amount of money spent for meat in school food service represents a substantial percentage of the total food cost; therefore, selection of this component requires careful attention.

Style

Meat may be purchased for food service in any one of several forms; by the carcass or the quarter, in wholesale cuts, or in ready-to-serve portions. The method of purchase best suited to any particular school depends on several factors, including school size, delivery service, storage, facilities, labor costs, and ability to utilize all parts of the edible meat. Inefficiency in any one of these steps can result in an increase in waste and a higher cost per unit.

When carcass meat is purchased, increased storage, facilities, and labor are necessary. Also there is always the additional problem of disposing of bones, excess fat, and other waste. Menus must provide for a complete utilization of the carcass and a quick turnover of all parts. Therefore, due to a limited menu, carcass and wholesale cuts are not the most practical way to purchase meats for school food service.

The purchase of meat in prefabricated or portion-ready form offers a maximum of control. This type of service is readily available.

Ready-to-serve portions can be purchased according to quality, size, and trim to meet the needs of any school. This means elimination of waste, an established cost for each serving, and equal portions for all customers. This type of purchasing is unusually well adapted to ground and stew meat, chicken, and turkey.

Advantages of purchasing prefabricated or preportioned meat may be summarized as follows: Each portion is cut, trimmed, and ready to be cooked with no trimming waste. It is cut to specification as to quality, weight, age, and cost. Each person receives the same size portion. And as an important control measure, the cost of each portion of meat is known when the menu is planned.

Precisely written specifications are necessary if quality meat purchasing is to be achieved. Good specifications are based on a sound knowledge of the factors that will meet preparation needs. Recognition of meat cuts and quality is a prime requisite. Grades of meat are indicators of quality and buyers need to know the factors that make up meat grades. To purchase meat properly, a buyer should know how it is to be cooked and from that decide on grade and cut required. Market conditions and pricing must be closely followed to know what is available. Well-written specifications will make it possible to standardize quality, portion size, and costs. The Institutional Meat Purchase Specifications (IMPS) are an excellent example of well-written specifications, prepared by the USDA's Livestock Division in cooperation with the meat industry. These specifications include most meat products purchased by institutions. (See pages 127 and 128.)

Physical Structure of Meat

To purchase meat properly, one must know about meat preparation and how the structure of meat is affected by cooking processes. Lean flesh is composed of muscles, which are conglomerate bundles of fibers held together by connective tissue. The size of the fiber is extremely small, especially in tender cuts or cuts from young animals, but the coarsest fibers may be distinguished by the naked eye. The size varies in length, depth and thickness, and this variation affects the grain and texture of the meat.

The quantity of connective tissue binding the fibers together will have much to do with the tenderness and eating quality. There are two kinds of connective tissue, the yellow (elastin) and the white (collagen). The thick yellow strap that runs along the neck and back of animals is an example of elastin. It is found throughout the muscles, especially in muscles of older animals or those muscles receiving considerable exercise. Elastin will not cook tender but must be broken up mechanically by pounding, cubing, grinding or other means. The white connective tissue, collagen, can be cooked tender. It hydrolyzes in moist heat to gelatin. The quantity of connective tissue in meat is governed by the age, breed, care, and feed given the animal.

The quantity of fat and its condition are important factors in deciding eating quality. Fat is found on the exterior and interior of the carcass and in the flesh itself. Fat deposited between muscles or between the bundles of fibers is called marbling. If marbling is present, the meat is apt to be more tender, flavorful, and moist. Much of the flavor of meat is given by fats found in lean or fatty tissues of the meat.

Extractives in meats are also responsible for flavor. Muscles that receive a great amount of exercise have a higher proportion of flavor extractives than those receiving less exercise. Shanks, neck muscles, and other parts receiving exercise will give richer broths and gravies and more flavorful meat than tender cuts. Tenderness, flavor, and moistness are increased if beef is aged or ripened for a time.

Food Marketing Regulations

The marketing and buying of food would be ineffective without rules and standards. The purchaser may be unaware of standards except as they appear in the form of grades which have standards behind them. Regulations of the Federal and State governments safeguard the purity, quality, and nutritive value of foods. These regulations also require proper labeling so that the purchaser knows what he is buying. Since the early days of this century, laws have helped assure the food buyer of wholesome, unadulterated food. The Federal laws

are administered by the U.S. Department of Agriculture and the Food and Drug Administration of the U.S. Department of Health, Education and Welfare.

Federal Inspection and Grading

Federal inspection is mandatory for all meat shipped in interstate commerce. It is assurance that the meat was produced from animals which were free from disease at the time of slaughter and was prepared under strict sanitary conditions.

Federally inspected meat or containers in which it is packed bear a round Federal meat inspection mark. An inspection mark of a different shape will appear on meat originating in an approved nonfederally inspected plant.

Federal Meat Inspection Stamp.

This round purple stamp on the meat indicates that it has been inspected and passed by a trained veterinary Federal inspector. The number identifies the federally inspected establishment. Some of the meat which is not federally inspected is slaughtered under State laws and regulations. These States have laws concerning the wholesomeness of meat and they conduct their own inspection programs which are equal to the Federal programs. The only exemption from inspection is for meat slaughtered for the personal use of the farmer or the owner of the animal.

Federal meat grading is an optional service provided by the USDA and provides a reliable guide to meat quality. Purchasers may specify the particular quality of meat they desire by indicating the USDA grade.

The Federal grade stamp on meat is easily identified. It is a purple ribbon-like stamp that appears on practically all wholesale cuts and most retail cuts. The grade name and the letters USDA-meaning United States Department of Agriculture—are enclosed in a shield. Each grade name is associated with a specific degree of quality, thus enabling purchasers to utilize meat most effectively by preparing it in the manner for which it is best suited.

Meats (beef) which are federally graded bear the applicable grade mark shown below.

USDA Prime grade beef is the ultimate in tenderness, juiciness, and flavor. It has abundant marbling, flecks of fat within the lean, which enhances both flavor and juiciness. Prime steaks and roasts from the rib and loin may be cooked with dry heat.

USDA Choice rib and loin cuts are also very tender, juicy, and flavorful. Choice grade beef has slightly less marbling than Prime, but still is of very high quality.

USDA Good grade beef is somewhat more lean than the two higher grades. It is relatively tender but, because it has less marbling, it lacks some of the juiciness and flavor of Prime and Choice beef.

USDA Standard grade beef has a high proportion of lean meat and very little fat. Because it comes from young animals, beef of this grade is fairly tender. However, because it has very little marbling, most cuts will be somewhat dry unless prepared with moist heat.

USDA Commercial grade beef is produced only from mature animals. Prime, Choice, Good, and Standard grades are restricted to young animals. Although it has considerable marbling it will require long, slow cooking with moist heat to make it tender. Commercial grade cuts make excellent stewing beef and ground beef.

USDA Utility grade beef is produced from mature animals and usually has a higher proportion of lean than meat from the commercial grade. Moist heat cooking is required for all cuts. Most stewing beef and ground beef come from the Utility and Commercial grades.

In addition to the quality grades for beef and lamb, the USDA offers yield grades as a guide to cutability. Cutability refers to the amount of usable meat in a carcass. High cutability carcasses combine a minimum of fat covering with very thick muscling and yield a high proportion of lean meat. The USDA yield grades are numbered 1 to 5 with 1 having the highest cutability. Yield grades are applicable to all quality grades.

Yield grades provide an indirect means for reflecting preferences for beef and lamb with a high ratio of lean to fat and bone, back through retailers and packers to the producer. This results in better values for the buyer. Also, when carcasses or wholesale cuts are purchased, yield grades are an excellent guide to yields of meat that will be obtained.

The USDA grades for lamb are USDA Prime, USDA Choice, USDA Good, USDA Utility and USDA Cull. The grades for veal and calf are specified as follows: USDA Prime, USDA Choice, USDA Good, USDA Standard, USDA Utility and USDA Cull. Like lamb, pork is generally produced from young animals and is therefore less variable in quality than beef.

USDA grades for pork reflect only two levels of quality, acceptable and unacceptable. Unacceptable quality pork, which includes that having soft and watery meat, is graded U.S. Utility. All higher grades must have acceptable quality of lean meat. The differences between these higher grades which are numerical, ranging from U.S. No. 1 to U.S. No. 4, are solely those of yield of the four major lean cuts. In this respect they are similar to the yield grades for beef and for lamb.

Like the yield grades for beef and lamb, the grades for pork are not of concern to the end user who buys retail cuts, as these grades are not identified at this level. But they can be useful if pork is bought in carcass form.

Since almost all pork is available to schools in the form of trimmed cuts, many of which are cured and/or smoked, most pork can be chosen on a selection basis as described in the IMPS.

There are two selection descriptions used for pork. They are described below:

Selection No. 1—Hams, shoulders, shoulder picnics, loins, and Boston butts of Selection No. 1 are meaty, based on a composite evaluation of thickness of muscling and quantity of intermuscular and external fat. Although various combinations of thickness of muscling and quantities of intermuscular and external fat will meet the minimum requirements for meatiness, cuts usually are at least moderately thick and plump throughout, have at least moderately thick muscling, and not more than a small amount of inter-muscular fat nor more than a small amount of external fat on the unskinned portions of skinned hams and shoulders. The bones must not be ossified to a degree that cartilage is not in evidence in the pelvic, spinal, and scapular sections of the pork cuts. The split chine bone, spinous processes, and crosscut sections of bones must be porous and not appreciably brittle or flinty. The color of the bones must be in the range from red to deep pink. The exterior surfaces of the rib bones must show at least some redness. The lean must be at least slightly firm; possess a bright, reasonably uniform color (slightly two-toned is permissible), ranging from light pink to light red; and have a fine, smooth texture. In addition, hams must have at least traces of marbling, and shoulders, shoulder picnics, loins, and Boston butts must have at least a slight amount of marbling.

The exterior fat on the fresh pork cuts must be at least slightly firm, white, and reasonably uniform in distribution. The skin must be thin, smooth, and pliable. The pork cuts must be free from bruises, dislocated or enlarged joints or other malformation, or odor foreign to fresh pork. They must be practically free from scores, miscut, abrasions, hook marks, blemishes, hair roots, or other defects.

Selection No. 2—Hams, shoulders, shoulder picnics, loins, and Boston butts of Selection No. 2 have a moderate degree of meatiness, based on a composite evaluation of thickness of muscling and quantity of intermuscular and external fat. Although various combinations of thickness of muscling and quantities of intermuscular and external fat will meet the minimum requirements for meatiness, cuts usually are at least slightly thick and plump throughout with slightly thick muscling and a slightly high to high amount of intermuscular fat with a slightly high to high amount of external fat on the unskinned portions of skinned hams and shoulders. The bones must not be ossified to a degree that cartilage is not in evidence in the pelvic, spinal, and scalpular sections of the pork cuts. The split chine bone, spinous processes, and crosscut sections of bones must be porous and not appreciably brittle or flinty. The color of the bones must be in the range from red to deep pink. The exterior surfaces of the rib bones must show at least some redness. The lean meat must be at least slightly firm, possess a bright, reasonably uniform color (slightly two-toned is permissible), ranging from light pink to light red; and have a fine, smooth texture. In addition, hams must have at least traces of marbling, and shoulders, shoulder picnics, loins, and Boston butts must have at least a slight amount of marbling.

The exterior fat on the fresh pork cuts must be at least slightly firm, white, and fairly uniform in distribution. The skin must be thin, smooth, and pliable. The pork cuts must be free from bruises, dislocated or enlarged joints or other malformation, or odor foreign to fresh pork. However, pork cuts with slight scores, abrasions, hook marks, or other cuts which do not interfere with the making of satisfactory slices, will be acceptable. Pork cuts showing only a slight amount of hair roots, or which are only slightly miscut or misshapen, may be included.

Federal grades for meats provide a guide to quality and cutability, and a guide to methods of preparation. Less tender cuts of meats are just as nutritious as tender cuts. Cuts with the lowest price per pound are not always the best buy. Determine yield and cost per serving. Compare with per serving cost of portion-ready meats. "The Food Buying Guide for Type A School Lunches," PA-270, gives information on how to calculate cost comparisons.

Carcass buying is not always economical. Careful cutting by an experienced person is required to get full value. Cost of expert butchering services is generally high. Using the entire carcass for ground or stew meat may make it more expensive than buying wholesale cuts.

Meats are available in various styles of cut and trim. The meat charts in the appendix (pages 129, 130, 131, and 132) show various cuts of beef, lamb, veal, and pork. Canned meats should always have the U.S. Government Inspection Stamp on the label or on the can or container.

USDA Acceptance Service for Meat and Meat Products

Schools using large quantities of meat may find it advantageous to utilize the Acceptance Service offered by the U.S. Department of Agriculture. The Meat Acceptance Service is based on USDA-approved Institutional Meat Purchase Specifications, commonly called IMPS. These specifications are the end product of extensive testing and development conducted by the Livestock Division of USDA's Agricultural Marketing Service in cooperation with various segments of the meat industry. For information on how to get copies of the IMPS and a partial listing of items appearing in the IMP Specifications, see pages 127 and 128 in the appendix of this publication.

Institutional Meat Purchase Specifications are available for fresh beef, fresh lamb and mutton, fresh veal and calf, fresh pork, cured pork, cured beef, edible by-products, and sausage products.

The specifications have been prepared to make their use as easy as possible. Each item is numbered and may be referred to simply by number. Each item listed in these specifications is described in careful detail. When a purchasing agent orders any item—for instance, Item 136 ground beef (regular)—there is no doubt on the part of the supplier or the Federal meat grader as to exactly what is wanted.

The purchasing agent makes use of the specifications and the USDA Meat Acceptance Service by:

- Obtaining from the Government Printing Office copies of the IMPS, General Requirements, and the specifications concerning the meat and meat products to be purchased. (See page 127 in the appendix for list of specifications.) Most suppliers already have copies.
- Listing the items to buy and indicating the grade, weight range, state of refrigeration, and any other options set forth in the specifications.
- Seeking bids on the items desired and awarding contracts to the lowest bidders. Then forwarding a copy of the purchase awards to the nearest USDA meat grading supervisor. (See list on page 128 in the appendix.)

When the purchaser requests delivery, the supplier asks the nearest USDA meat grading office to have a grader examine the product. The meat grader is responsible for accepting the product and certifying that it is in compliance with specifications.

The Federal grader stamps each acceptable meat item, or the sealed carton in which it is contained, with a shield-shaped stamp bearing the words, "USDA Accepted as Specified." This assures the purchaser that all products delivered met the requirements of the specifications at the time of acceptance.

This method of meat procurement assures the purchaser of a wholesome product of the grade, trim, weight, and other options requested. (Only meat that has passed inspection for wholesomeness will be examined for "Acceptance.") This system also encourages competitive bidding and usually results in overall lower costs, permits long-range meal planning, and eliminates controversies between the buyer and seller over compliance of product.

Schools making small purchases of meat may not find it practical to use the USDA Meat Acceptance Service. However, it is important that these small purchases be based on at least brief specifications covering the most important aspects of the product. Brief descriptions of some meat items purchased most often by schools are outlined on pages 42 to 55. More detailed descriptions of these and other items may be found in the IMPS.

Beef, Canned in Natural Juices, Special Purchase

(Specifications based on USDA purchased canned beef in natural juices donated to schools.)

Purchase Units: 29-ounce cans, 24 cans per case

Form: Canned

Grade: Cuts of U.S. Cutter or higher, except flanks, briskets, short plates, and shanks may be ungraded.

Percentage of Fat: Not more than 18 percent fat.

Percentage of Salt: Not more than 1.3 percent.

Recommended Points for Specifications:
Material: Beef shall be the only meat ingredient used, and it shall be derived from fresh chilled steer, heifer, and/or cow beef carcasses, sides, and/or cuts. Bone-in meat destined for use in the product shall show no evidence of off-condition; including but not restricted to off-odor, slightly sticky, gassy, rancid, sour, or showing dark discoloration. Also, it shall show no evidence of freezing, defrosting, or mishandling.

Boning and Trimming: Beef shall be completely boneless and have the following parts excluded: bruises, blood clots, and discolored meat; heavy connective tissue; membranous covering; cartilage;

ligaments; kidneys; cod, udder, kidney, heart, and pelvic fat; major lymph and thymus glands; dehydrated surfaces; and carotid arteries and jugular veins.

Formulation: The formulation of the beef (proportions of primal and rough cuts) may be based on either bone-in or boneless weights. At least 75 percent of the total weight of the beef shall be from any one or any combination of primal cuts (square-cut chucks, ribs, trimmed full loins, trimmed short loins, loin ends, or rounds) and the remaining 25 percent or less may be from any one or any combination of rough cuts (fore or hind shanks, flanks, short plates, or briskets). Beef may be offered for formulation in the form of carcasses, sides, quarters, or cuts.

All suitable lean meat shall be used in proportions as existing in the involved bone-in beef except that tenderloins, hanging tenders, skirts, rib fingers, and any portion of meat from the rough cuts may be excluded in any combination at the option of the vendor. Primal cuts which have had a slight amount of bruised meat fully removed will be acceptable. Primal cuts which have had more than a slight amount of lean removed, and are therefore ineligible to be included in the formulation as primal cuts may be included as rough cuts.

Methods for Handling Boneless Beef Prior to Canning: The canned beef with natural juices may be prepared from fresh-chilled and/or fresh-frozen beef. Beef which is not canned and heat processed on the day of acceptance shall be maintained and handled according to the following methods.

- Fresh-chilled, boneless beef may be held for not more than 4 days provided its temperature does not exceed 40°F at time of resuming further preparation of the product. Dry ice may be used, if desired.

or

- Fresh-chilled, boneless beef may be frozen for not more than 60 days from date of acceptance. The beef may be placed in the freezer at any time during interim holding as described above. Prior to freezing, accepted boneless beef may be cut into approximately 2-inch or thicker strips. Boneless beef that is frozen shall be packaged and packed to protect it from freezer deterioration or other damage. Containers used for packing shall be the kind used commercially, provided that these are adequate to maintain product excellence during freezer storage. The frozen beef shall be maintained without defrosting to the time of further processing.

Processing: The temperature of the beef shall not exceed 50°F during preparation until heat processing. Beef exceeding such temperature shall be rejected.

Beef which has been frozen prior to processing shall be protected from physical damage and when defrosted shall be subjected to further phases of preparation within 8 hours after the beef thaws or attains an internal temperature exceeding 32°F. Water used for defrosting beef shall not exceed 50°F at the end of the hour after application. In accordance with Federal Meat Inspection Regulations moisture defrosted beef shall be drained before further processing to weigh no more than its original weight before freezing.

The boneless beef may be cut into approximately 2-inch or thicker strips prior to grinding. The trimmed, boneless beef shall be ground into chunks by use of a standard feed-screw type grinder only which shall have a plate with holes 1 1/2 to 2 inches in diameter and a knife with not more than 3 blades. Grinding equipment used shall have sharp knives and plates.

Immediately after grinding, the ground beef chunks shall be mechanically mixed, vacuumized, and then clean cans shall be filled with 29 ounces of beef and the filled cans vacuumized, sealed, and heat processed for long-term, non-refrigerated storage. The salt may be added during mixing or at the time of can filling.

Packaging: Cans shall be hermetically sealed, open-top style, cylindrical, of either size 401 by 411 or 404 by 404. Cans shall have soldered side seams and compound-lined, double-seamed ends.

Beef, Clod Roast

Purchase Units: Pound

Form: Fresh or Frozen

Grade: USDA Good or better

Surface Fat:

Maximum Average Thickness	Maximum at Any One Point
1 inch	1 1/4 inch
1/2 inch	3/4 inch
1/4 inch	1/2 inch

Weights:
Under 15 pounds
15–18 pounds
18–21 pounds
21 pounds and up

Recommended Points for Specifications:
Roasts should be prepared from shoulder clod (the large outside muscle system that lies posterior to the elbow joint and ventral to medial ridge of blade bone) with shoulder rose (cutaneous muscle) removed when the underlying fat is in excess of surface fat specified. In this instance, the underlying fat must be trimmed to comply with the surface fat thickness requirements. The heavy tendons at the elbow end of the clod shall be trimmed even with the lean and all sides shall be trimmed so that the clod is not less than 1-inch thick at any point. When small roasts are specified, the thick end of the clod shall be made into one roast and the thin end shall be split lengthwise, the ends reversed and the boned

surface placed together to produce a uniformly thick roast. These roasts shall be held intact by tying girthwise.

The beef shall be of good color normal to the grade, be practically free of bruises, blood clots, bone dust, ragged edges, and discoloration. Except as otherwise provided herein, the meat shall show no evidence of freezing or defrosting. Also, the product shall show no evidence of mishandling and shall be in excellent condition to the time of delivery.

Institutional Meat Purchase Specification No: 114A

Beef, Cubed Steaks

Purchase Units: Pound

Form: Fresh or Frozen

Grade: USDA Good or better

Surface and Seam Fat: Not more than 15 percent of the total area of either side of steak.

Recommended Points for Specifications:
Beef must be derived from beef carcasses or wholesale cuts. The beef shall be of good color normal to the grade, be practically free of bruises, blood clots, bone dust, ragged edges, and discoloration. Except as described below, the meat shall show no evidence of freezing or defrosting. Also, the product shall show no evidence of mishandling and shall be in excellent condition to the time of delivery.

Portion cut items to be delivered frozen may be produced from frozen meat cuts which have been previously accepted in the fresh-chilled state provided such cuts are in excellent condition and in their original shape. Products thus produced shall be packaged, packed, and promptly returned to the freezer.

Cubed steaks may be produced from any boneless meat from the beef carcass which is reasonably free of membranous tissue, tendons, and ligaments. The meat shall be made into cubed steaks through use of machines designed for this purpose. Knitting of two or more pieces and folding of the meat when cubing is permissible. Cubed steaks shall be reasonably uniform in shape, i.e., practically square, round, or oval. After cubing, surface fat on the edge of the cubed steaks shall not exceed 1/2 inch in width at any one point when measured from the edge of the lean. The cubed steak shall not break when suspended from any point 1/2 inch from the outer edge of the steak.

Special cubed steaks shall meet all the requirements described above except that they shall be produced only from muscles contained in the round, loin, rib, or square-cut chuck. Knitting of two or more pieces or folding of the meat is not acceptable.

Institutional Meat Purchase Specification No: 1100, 1101

Beef, Ground, Market Style

Purchase Units: Pound

Form: Fresh or Frozen

Grade: USDA Utility or better

Percentage of Fat: Not more than 25 percent visible fat

Recommended Points for Specifications:
The beef shall be of good color normal to the grade, be practically free of bruises, blood clots, bone dust, ragged edges, and discoloration. Except as otherwise provided herein, the meat shall show no evidence of freezing or defrosting. Also, the product shall show no evidence of mishandling and shall be in excellent condition to the time of delivery.

Regular ground beef may be prepared from any beef (graded or ungraded) including trimmings. Meat from the head, tongue, heart, or esophagus or straight (added) fat is not acceptable. Meat with dark discoloration, all bones, cartilage, backstrap, exposed large blood vessels, heavy connective tissue, and the prescapular, popliteal, and prefemoral lymph glands shall be removed. The thick tendinous ends of shanks shall be removed by cutting back until a cross-sectional cut shows at least 75 percent lean.

After being prepared as described above, the boneless meat shall be ground at least once through a plate having holes no larger than 3/4 inch in diameter (or it may be otherwise reduced in size provided the texture and appearance of the product after final grinding is typical of ground beef prepared by grinding only.) Final grinding shall be through a plate having holes 1/8 inch in diameter.

The meat shall be thoroughly blended prior to and subsequent to each reduction in size except that the ground beef shall not be mixed after the final grinding.

The boneless meat shall not exceed 50°F during grinding and packaging. The ground beef shall be packaged in the amount specified by the purchaser and packed immediately upon completion of grinding.

Institutional Meat Purchase Specification No: 136

Ground beef may be prepared as described above except that not less than 50 percent, by weight, of any one or any combination of graded primal cuts (square-cut chucks, ribs, trimmed full loins, trimmed short loins, loin ends, or rounds) shall be used. Tenderloins may be excluded. Compliance with the formulation requirement shall be determined on a boneless basis. Primal cuts which have had more than a slight amount of lean removed may be used

provided that meat of similar character and amount is added from the above listed primal cuts.

Institutional Meat Purchase Specification No: 137

Beef, Ground, Special Purchase

(Specifications based on USDA purchased ground beef donated to schools.)

Purchase Units: Pound

Form: Fresh or Frozen

Grade: U.S. Utility or higher

Percentage of Fat: Not more than 25 percent visible fat.

Recommended Points for Specifications:

Material: Beef should be prepared from fresh-chilled steer, heifer, or cow carcasses, sides, or cuts. Flanks, briskets, short plates, and shanks may be ungraded and of any class. The bone-in meat to be used in the final product shall show no evidence of off-condition, including but not restricted to off-odor, slightly sticky, gassy, rancid, sour, or showing dark discoloration. It should show no evidence of freezing, defrosting, or mishandling.

Boning and Trimming: Beef shall be completely boneless and have the following parts removed and excluded: bruises, blood clots, and discolored meat; heavy connective tissue; membranous covering; cartilage; ligaments; kidneys; cod, udder, kidney, heart, and pelvic fat; major lymph and thymus glands; dehydrated surfaces; and carotid arteries and jugular veins.

Formulation: The formulation of the beef (proportions of primal and rough cuts) may be based on either bone-in or boneless weights. At least 50 percent of the total weight of the beef shall be from any one or any combination of primal cuts (square-cut chucks, ribs, trimmed full loins, trimmed short loins, loin ends, or rounds) and the remaining 50 percent or less may be from any one or any combination of rough cuts (fore or hind shanks, flanks, short plates, or briskets). Beef may be offered for formulation in the form of carcasses, sides, quarters, or cuts.

All suitable lean meat shall be used in proportions as existing in the involved bone-in beef except that tenderloins, hanging tenders, skirts, rib fingers, and any portion of meat from the rough cuts may be excluded in any combination at the option of the buyer. Primal cuts which have had a slight amount of bruised meat fully removed will be acceptable. Primal cuts which have had more than a slight amount of lean removed, and are therefore ineligible to be included in the formulation as primal cuts, may be included as rough cuts. Boneless meat originating from primal cuts and rough cuts shall be thoroughly blended prior to final grinding.

Grinding: The boneless meat shall be in excellent condition prior to grinding and shall be ground within 20 hours after boning. Initial grinding shall be through a plate having holes no larger than $^3/_4$ inch in diameter (or it may be otherwise reduced in size provided the texture and appearance of the product after final grinding are typical of ground beef prepared by grinding only). Subsequent to initial grinding, chopping, etc., the product shall be ground once through a plate having holes $^1/_8$ inch in diameter. Grinding equipment used must have sharp knives and plates. At the buyer's option, meat may be mixed between the first and second grind. The ground beef should never be mixed after final grinding.

Product temperature shall not exceed 50°F at any time during preparation up to and including placement in the freezer if meat is to be frozen. Product exceeding such temperature shall be rejected. Use of dry ice is permitted to maintain temperatures.

Packaging: Size package depends on form, fresh or frozen, in which meat is purchased and the buyer's needs. The ground beef should be packaged in compact uniform sizes according to the specifications of the buyer. Individually packaged ground beef should be practically free from air spaces and shall be tightly and completely wrapped by ample overlapping and securely fastened.

Freezing, Storing, and Shipping: Within 4 hours after final grinding, product properly packaged and packed shall be placed in a wind tunnel or sharp freezer having forced air circulation and a temperature not higher than 0°F or it may be frozen by any other method giving equivalent results. Boxes shall be arranged in layers with dunnage between each layer. It shall be the vendor's responsibility to hold the ground beef at a uniform storage temperature of 0°F or lower until time of shipment. At the time of shipment, the ground beef shall show no evidence of defrosting, refreezing, or freezer deterioration. The ground beef shall be held in the freezer for at least 5 days but not in excess of 60 days before loading for delivery. The vendor should assure that the truck or rail car in which the ground beef is to be shipped is mechanically refrigerated and is capable of maintaining a temperature of 0°F or lower during shipment. Before being loaded, the truck or rail car shall be pre-cooled by its self-contained refrigeration equipment to a temperature not higher than 15°F.

Beef, Ground Patties, Regular

Purchase Units: Pound

Form: Fresh or Frozen

Grade: USDA Utility or better

Size: 2.67-ounce patty, six patties per pound

Percentage of Fat: Not to exceed 25 percent visible fat

Recommended Points for Specifications:
Beef products described in these specifications must be derived from beef carcasses or wholesale cuts. The beef shall be of good color normal to the grade, be practically free of bruises, blood clots, bone dust, ragged edges, and discoloration. Except as otherwise specified, the meat shall show no evidence of freezing, or defrosting. Also, the product shall show no evidence of mishandling and shall be in excellent condition to the time of delivery.

Portion cut items to be delivered frozen may be produced from frozen meat cuts which have been previously accepted in the fresh-chilled state provided such cuts are in excellent condition and in their original shape. Products thus produced shall be packaged, packed, and promptly returned to the freezer. Ground beef patties shall be prepared from ground beef, regular. The ground beef shall be mechanically formed into round patties of the size specified. They shall be arranged in stacks with each patty separated from adjacent patties by two sheets of waxed patty paper except that, when patties are individually quick frozen, the patty paper may be excluded. When producing patties to be delivered frozen, frozen boneless beef previously accepted in the fresh state may be used.

Institutional Meat Purchase Specification No: 1136

Beef, Ground Patties, Regular TVP Added

Purchase Units: Pound

Form: Fresh or Frozen

Grade: USDA Utility or better

Percentage of Fat: Not to exceed 25 percent visible fat

Recommended Points for Specifications:
This item is the same as ground beef patties, regular, except that it shall be prepared from ground beef with textured vegetable protein added.

Institutional Meat Purchase Specification No: 1136A

Beef, Stew Meat, Diced

Purchase Units: Pound

Form: Fresh or Frozen

Grade: USDA Good or better

Percentage of Fat: Not more than 25 percent visible fat

Recommended Points for Specifications:
The beef shall be of good color normal to the grade, be practically free of bruises, blood clots, bone dust, ragged edges, and discoloration. Except as otherwise provided herein, the meat shall show no evidence of freezing or defrosting. Also, the product shall show no evidence of mishandling and shall be in excellent condition to the time of delivery.

This item may be prepared from any combination of carcasses or cuts which will produce diced beef complying with the end product requirements. Meat from shanks is not acceptable. Meat with dark discoloration and all bones, cartilage, backstrap, exposed large blood vessels, heavy connective tissues, and the prescapular, popliteal, and prefemoral lymph glands shall be removed. Prior to dicing, the meat shall be trimmed in such a manner that surface and seam fat shall not exceed 1/2 inch in thickness at any one point.

After being prepared as described above, the boneless meat shall be either hand-diced or processed through a dicing machine (grinding not permitted). Not less than 75 percent, by weight, of the resulting pieces shall be of a size which is equivalent of not less than a 3/4-inch cube or not more than a 1 1/2-inch cube and no individual surface on these pieces shall exceed 2 1/2 inches in length.

Institutional Meat Purchase Specification No: 135

For a lower fat content specify 20 percent fat with surface and seam fat not to exceed 1/4 inch in thickness at any one point.

Institutional Meat Purchase Specification No: 135A

Lamb, Ground

Purchase Units: Pound

Form: Fresh or Frozen

Grade: USDA Good or better

Fat Content: Shall not exceed 25 percent visible fat

Recommended Points for Specifications:
The meat shall be of good color normal to the class, be practically free of bruises, blood clots, bone dust, ragged edges, and discoloration. Except as otherwise provided herein, the meat shall show no evidence of mishandling and shall be in excellent condition to the time of delivery.

Ground lamb may be prepared from any combination of carcasses or cuts. Meat with dark discoloration, all bones, cartilage, backstrap,

exposed large blood vessels, and the prescapular lymph gland shall be removed. After being prepared as described above, the boneless meat shall be ground at least once through a plate having holes no larger than 3/4 inch in diameter (or it may be otherwise reduced in size provided the texture and appearance of the product after final grinding is typical of ground lamb prepared by grinding only.)

The meat shall be thoroughly blended prior to and subsequent to each reduction in size except that the ground lamb shall not be mixed after the final grinding. The boneless meat shall not exceed 50° F during grinding and packaging. The ground lamb shall be packaged and packed in the amount specified by the purchaser and packed immediately upon completion of grinding. (When specified, this item may be prepared from yearling mutton or mutton, in which case the name shall be changed to yearling mutton or mutton, as applicable.)

Institutional Meat Purchase Specification No: 1296

Lamb, Roasts

Shoulder, Square Cut, Boneless and Tied

Purchase Units: Pound

Form: Fresh or Frozen

Grade: USDA Good or better

Class:
Lamb
Yearling Mutton
Mutton

Weights:
Lamb 3–4, 4–6, 6–7, 7–8 pounds
Mutton 6–8, 8–10, 10–12, 12–16 pounds

Recommended Points for Specifications:
Meat shall be of good color normal to the class, be practically free of bruises, blood clots, bone dust, ragged edges, and discoloration. Except as otherwise provided herein, the meat shall show no evidence of mishandling and shall be in excellent condition to the time of delivery.

The boneless and tied shoulder is prepared from the foresaddle after the removal of the bracelet. Boning shall be done by scalping the rib and backbones. The bladebone shall be removed without cutting through the flesh at the ridge of the bladebone so as to leave the shoulder meat, including the clod, intact. Meat with dark discoloration, all bones, cartilage, backstrap, exposed large blood vessels, and the prescapular lymph gland and surrounding fat in excess of 1/2 inch in thickness shall be removed. The boneless shoulder shall be rolled with the eye muscle lengthwise of the roll and shall be tied girthwise and lengthwise.

Institutional Meat Purchase Specification No. 208

Lamb, Roasts

Leg, Oven Prepared, Boneless and Tied

Purchase Units: Pound

Form: Fresh or Frozen

Grade: USDA Good or better

Class:
Lamb
Yearling Mutton
Mutton

Weights:
Lamb 4–6, 6–8, 8–9, 9–11 pounds
Mutton 8–10, 10–13, 13–16, 16–18 pounds

Recommended Points for Specifications:
Meat shall be of good color normal to the class, be practically free of bruises, blood clots, bone dust, ragged edges, and discoloration. Except as otherwise provided herein, the meat shall show no evidence of mishandling and shall be in excellent condition to the time of delivery.

The oven-prepared leg is prepared from the legs of the hind saddle after the removal of the loin. The roast shall be boneless. The flank, practically all cod or udder fat, and surface fat in excess of 1/2 inch shall be removed. The shank shall be removed by a cut along the natural seam between the shank meat and the heel and through the stifle joint.

Institutional Meat Purchase Specification No.: 234A

Lamb, Stew Meat

Purchase Units: Pound

Form: Fresh or Frozen

Grade: USDA Good or better

Class:
Lamb
Yearling Mutton
Mutton

Percentage of Fat: Visible fat shall not exceed 20 percent.

Recommended Points for Specifications:
The meat shall be of good color normal to the class, be practically free of bruises, blood clots, bone dust, ragged edges, and discoloration. Except as otherwise provided herein, the meat shall show no evidence of mishandling and shall be in excellent condition to the time of delivery.

This item may be prepared from any combination of carcasses or cuts which will produce lamb for stewing complying with the end product requirements. Meat from shanks is not acceptable. Meat with dark discoloration and all bones, cartilage, backstrap, exposed large blood vessels, and the prescapular lymph gland shall be removed. Prior to dicing, the meat shall be trimmed in such a manner that surface and seam fat shall not exceed 1/4 inch in thickness at any point. After being prepared as described above, the boneless meat shall be hand diced or processed through a dicing machine (grinding not permitted.) Not less than 75 percent, by weight, of the resulting pieces shall be of a size which is the equivalent of not less than a 1/2-inch cube or more than a 1 1/4-inch cube and no individual surface on these pieces shall exceed 2 1/2 inches in length. (When specified, this item may be prepared from yearling mutton or mutton. In such cases, the name shall be changed to yearling mutton or mutton, as applicable.)

Institutional Meat Purchase Specification No.: 1295

Liver, Beef or Pork

Purchase Units:
Whole liver by pound
Sliced liver, reassembled in natural sequence, layer packed.

Form: Fresh or Frozen

Selection: Selection No. 1 or Selection No. 2

Selection No. 1 Liver—Livers shall be compact, thick, short, plump, and shall be practically free from blemishes. However, livers with cuts or scores not exceeding 1 inch in any dimension or livers with small sections removed and excluded are acceptable, provided such defects do not interfere with making satisfactory intact slices. Selection No. 1 livers shall posses a bright, uniform color typical of the species.

Selection No. 2 Liver—Livers shall be at least moderately compact, thick, short, plump, and shall be practically free from blemishes. However, livers with cuts or scores not exceeding 2 inches in any dimension or livers with up to approximately 1/3 of the liver removed are acceptable, provided such defects do not interfere with making satisfactory intact slices. Selection No. 2 livers shall possess a bright, uniform color typical of the species.

Style:
Regular
Skinned

Recommended Points for Specifications:
Livers shall show no evidence of freezing or defrosting and must be in excellent condition to the time of delivery.

All livers shall be trimmed free of ragged edges and the gall bladder shall be removed. Whole livers shall have the heavy connective tissue, and large blood vessel, and ducts lying along the liver wall trimmed even with the surface.

Livers to be sliced shall have the heavy connective tissue, the large blood vessel, and ducts lying along the liver wall removed and excluded. The liver may be molded, frozen, tempered (but not thawed), and/or pressed before slicing. Slices which are broken are not acceptable. Liver slices shall be practically free from liver sawdust. As specified, they may be either (a) reassembled in natural sequence, or (b) layer packed with plastic or parchment or waxed paper separators between layers. After slicing, the liver slices must be promptly packaged and solidly frozen.

Livers to be portion-cut must be prepared as described for livers to be sliced, except that the small (caudate) lobe and the "skin" must be removed and excluded. Portion-cut liver shall be layer packed only.

Detailed Requirements:
Beef Liver—The color of beef liver may range from light brown, with reddish shades predominating, to dark brown.

Beef Liver, Sliced (Frozen)—Sliced beef liver must be prepared from beef liver. Liver slices shall be approximately 3/8 to 1/2 inch in thickness.

Beef Liver, Portion-Cut (Frozen)—Portion-cut liver must be sliced approximately 5/16-inch thick. Portions shall be at least moderately uniform in weight and, for portion sizes of 4 or less to the pound, the total number of individual portions per 10-pound unit shall vary not more than plus or minus 2 from the number per pound specified multiplied by 10. (For example, if the number per pound specified is 4 to the pound, then 4 × 10 = 40 portions. Therefore, with the permitted tolerance of plus or minus 2 from 40, an acceptable 10-pound unit could have from 38 to 42 individual portions.) For portion sizes of 5 or more to the pound, the total number of individual portions per 10-pound unit shall vary not more than plus or minus 3 from the number per pound specified multiplied by 10.

Pork Liver—The color of pork liver may range from light reddish brown to very dark brown (not bluish or black), with reddish shade predominating.

Institutional Meat Purchase Specification No: 701, 702, 703, 710

Pork, Cured, Ham Boneless

Purchase Units: Pound

Form: Fresh or Frozen

Selection: Selection No. 1 or Selection No. 2

Recommended Points for Specifications:
The cured pork must be derived from sound, well-trimmed wholesale market and fabricated cuts. The pork must show no evidence of freezerburn, mishandling, rancidity, or other detrimental blemish. Pork cuts which have been excessively trimmed in order to make specified weights or which are substandard for any reason with these specifications must be excluded. They must be in excellent condition to the time of delivery.

The skinless, completely boneless, cured and smoked ham must be prepared from the regular short shank ham. The femur bone must be removed without unduly lacerating or damaging the ham. The shank meat, if used, must be attached naturally and after proper trimming—removal of major tendons and practically all surface fat—must be folded back into the adjacent femur bone cavity as a "plug" (preferably stitched). The prepared cured ham must be encased in a close-fitting, artifical casing of good transparency showing the exterior characteristics of the smoked ham. The casing must be of suitable size, strength, and quality to withstand conventional careful handling of the product to the time of delivery. The ham must be handled and placed in the casing with the major muscle fibers running parallel (lengthwise) with the casing so that customary slicing will be at appropriate right angles and in a manner to result in an acceptable, smooth, compact, cohesive (proper sliceability), ham of good symmetry having a cylindrical, oval, or elliptical shape and without detrimental recesses (pockets of air, moisture, rendered fat), in the finished product (close string stitching permissible). The encased ham may be smoked in stockinets, or a similar hanging device.

Institutional Meat Purchase Specification No: 505

Pork, Fresh, Ham Boned and Tied

Purchase Units: Pound

Form: Fresh or Frozen

Selection: Selection No. 1 or Selection No. 2

Recommended Points for Specifications:
Pork with coarse-textured dark meat or other characteristics indicating that they were produced from aged sows, stags, or boars are not acceptable. Cuts which have been excessively trimmed in order to meet specified weights or which do not meet the specification requirements are not acceptable. Except when ordered frozen, the meat shall show no evidence of freezing or defrosting. Also, the product shall show no evidence of mishandling and shall be in excellent condition to the time of delivery.

This item is prepared from fresh regular ham, skinned and short shanked. All bones, cartilage, skin, and surface fat in excess of 1/2 inch shall be removed. Fat on the butt end shall be beveled back at least 1 inch from the edge of the lean. Shank meat which is naturally attached may be included and shall be folded into the femur bone cavity as a plug. The ham shall be tied girthwise and lengthwise.

Institutional Meat Purchase Specification No: 402B

Pork, Chops

Purchase Units: Pound

Form: Fresh or Frozen

Selection: Selection No. 1 or Selection No. 2

Types of Chops:
Bladeless
Center Cut
Loin
Rib

Recommended Points for Specifications:
Pork with coarse-textured dark meat or other characteristics indicating that they were produced from aged sows, stags, or boars are not acceptable. Cuts which have been excessively trimmed in order to meet specified weights or which do not meet the specification requirements for any reason are not acceptable. Except as otherwise provided herein, the meat shall show no evidence of freezing or defrosting. Also, the product shall show no evidence of mishandling and shall be in excellent condition to the time of delivery.

The chops are prepared from pork loin with the diaphragm and hanging tender removed before slicing. The loin must be cut from end to end into chops.

Unless otherwise specified in the individual item specification, chops and steaks shall be cut in full slices in a straight line reasonably perpendicular to the outer surface and at an approximate right angle to the length of the cut from which they are produced.

Portion cut items to be delivered frozen may be produced from frozen cuts which have been previously accepted in the fresh-chilled state provided such cuts are in excellent condition and in their original shape. Products thus produced shall be packaged, packed, and promptly returned to the freezer.

Institutional Meat Purchase Specification No: 1410, 1411, 1412, 1412B, 1413

Pork, Ground

Purchase Units: Pound

Form: Fresh or Frozen

Percentage of Fat: Visible fat prior to grinding shall not exceed 25 percent.

Recommended Points for Specifications:
Pork with coarse-textured dark meat or other characteristics indicating that they were produced from aged sows, stags, or boars are not acceptable. Cuts which have been excessively trimmed in order to meet specified weights or which do not meet the specification requirements for any reason are not acceptable. Except as otherwise provided herein, the meat shall show no evidence of freezing or defrosting. Also, the product shall show no evidence of mishandling and shall be in excellent condition to the time of delivery.

Ground pork shall be prepared from the shoulder, skinned shoulder, picnic shoulder, and the Boston butt. Meat with dark discoloration, all bones, cartilage, backstrap, and exposed large blood vessels shall be removed. After being prepared as described above, the boneless meat shall be ground at least once through a plate having holes no larger than $^3/_4$ inch in diameter (or it may be otherwise reduced in size provided the texture and appearance of the product after final grinding is typical of ground pork prepared by grinding only.) Final grinding shall be through a plate having holes $^3/_{16}$ inch in diameter. The meat shall be thoroughly blended prior to and subsequent to each reduction in size except that the ground pork shall not be mixed after the final grinding. The boneless meat shall not exceed 50° F during the grinding and packaging. The ground pork shall be packaged in the amount specified by the purchaser and packed immediately upon completion of grinding.

Institutional Meat Purchase Specification No: 1496

Pork for Chop Suey

Purchase Units: Pound

Form: Fresh or Frozen

Recommended Points for Specifications:
Pork for chop suey may be prepared from any boneless meat from the skinned ham or Boston butt. Cuts used must be separated into their major muscles by cutting through the natural seams. Practically all surface and seam fat must be excluded. In addition, when present, the following must be removed and excluded: bone, skin, opaque membranous tissue, cartilage, periosteum, and major ligaments and tendons. The boneless meat shall be ground through a plate with $^3/_4$-inch holes in a conventional grinder having a sharp, 3-bladed knife or it may be machine-cut into pieces of a comparable approximate size as produced by grinding. However, if specified by the purchaser, the meat must be hand cut into pieces of the size desired.

Institutional Meat Purchase Specification No: 1495

Pork, Spareribs

Purchase Units: Pound

Form: Fresh or Frozen

Recommended Points for Specifications:
Pork with coarse-textured dark meat or other characteristics indicating that they were produced from aged sows, stags, or boars are not acceptable. Cuts which have been excessively trimmed in order to meet specified weights or which do not meet the specification requirements for any reason are not acceptable. Except when ordered frozen, the meat shall show no evidence of freezing or defrosting. Also, the product shall show no evidence of mishandling and shall be in excellent condition to the time of delivery.

Spareribs are prepared from the intact rib section removed from the belly and may include portions of the costal cartilages with or without portions of the breastbone and diaphragm.

Spareribs may be prepared with the breast off. If so, spareribs are prepared as described above except that the sternum and costal cartilages shall be removed. When specified, the rib section shall be separated into two approximately equal portions by a lengthwise cut.

Institutional Meat Purchase Specification No: 416, 416A

Bologna

Purchase Units: Pound

Form: Fresh or Frozen

Formula: (Major ingredients only)
Beef and pork in any combination
Beef and pork in any combination plus nonfat dry milk
Beef, pork (beef is predominant)
Beef, pork (beef is predominant) plus nonfat dry milk
Pork, beef (pork is predominant)
Pork, beef (pork is predominant) plus nonfat dry milk

Color:
Natural (not artifically colored)
Artificially colored (red)

Recommended Points for Specifications:
Bologna is a smoked, cooked sausage. The meat components consist of beef and pork very finely communited and stuffed in artificial or natural casings.

The interior cut surface is smooth, fine-textured, light pink in background color, and finely mottled with evenly distributed light to dark red flecks.

Institutional Meat Purchase Specification No: 801

Breakfast Sausage

Purchase Units:
Pound: Incasings, 6–8 or 8–10 links per pound
Bulk, 5, 6 or 10 pounds

Form: Fresh or Frozen

Recommended Points for Specifications:
Breakfast sausage is a fresh product. The meat components consist of predominately pork, with smaller amounts of beef and/or veal. The meat is chopped or ground to a moderately coarse texture. Breakfast sausage may be packed in bulk or stuffed in artificial or hog casings. The links and rolls are moderately uniform in length and diameter. For product in unlinked hog casings no more than one piece shall be less than 12 inches in length in a primary container.

Institutional Meat Purchase Specification No: 810

Frankfurter, Market Style

Purchase Units: Pound: 6, 8, or 10 links per pound

Form: Fresh or Frozen

Formula: (Major ingredients only)
Beef and pork in any combination
Beef and pork in any combination plus nonfat dry milk
Beef, pork (beef is predominant)
Beef, pork (beef is predominant) plus nonfat dry milk
Pork, beef (pork is predominant)
Pork, beef (pork is predominant) plus nonfat dry milk
Beef

Color:
Natural (not artifically colored)
Artificially colored (red)

Recommended Points for Specifications:
Frankfurters are a smoked, cooked, linked sausage. They are either skinless, stuffed in sheep casings, or stuffed in collagen casings and are uniform in length and diameter. Links shall be 5 to 6 inches in length. The meat components consist of very finely comminuted beef or beef and pork. The interior cut surface is smooth, fine-textured, light to moderately dark pink in background color, and finely mottled with evenly distributed light to dark red flecks.

Institutional Meat Purchase Specification No: 800

Frankfurter, Beef and Pork, Special Purchase

(Specifications based on USDA purchased frankfurters donated to schools.)

Purchase Units:
Pound: 8 or 10 frankfurters per pound

Form: Fresh or Frozen

Percentage of Fat: Not more than 30 percent fat

Percentage of Salt: Not more than 2.8 percent salt

Recommended Points for Specifications:

Material: Boneless beef and pork destined for use in the product shall show no evidence of off-condition, including but not restricted to off-odor, slightly sticky, gassy, rancid, sour, or showing dark discoloration. The boneless meat shall show no evidence of mishandling nor shall it be ground or chopped prior to acceptance.

Formulation: Frankfurters shall comply with the following formulation.

1. Ingredients
Boneless beef: Minimum 30—maximum 70 pounds per 100 pounds of meat.
Boneless pork: Minimum 30—maximum 70 pounds per 100 pounds of meat.
Salt: Maximum 2.8 percent of weight in finished product.
In addition to these requirements, processed product prepared under this specification may be "reworked" provided: (1) it complies with USDA regulations governing the meat inspection and (2) not more than five percent of such product is incorporated into a batch of nonprocessed product.

2. Other Seasonings
Sucrose (cane or beet sugar): 8 ounces per 100 pounds of meat, or *Dextrose:* 12 ounces per 100 pounds of meat.
Decorticated Black Pepper (ground natural spice): 4 ounces per 100 pounds of meat.
Nutmeg: 2 ounces per 100 pounds of meat (or an adjusted amount).
Coriander: 2 ounces per 100 pounds of meat.

The contractor shall issue a certificate stating that the seasoning formulation complies with this specification.

3. Liquid Smoke
Curing ingredients and curing accelerators: In amounts permitted by USDA meat inspection regulations. Liquid smoke or hardwood smoke or a combination of the two is permitted.
Water or ice: See finished product requirements.

Finished Product Requirement: External Physical Characteristics. Frankfurters should have a normal odor and flavor and be uniform in size. Products having a foreign odor or flavor (scorched, musty,

rancid, sour, etc.) and differing in lengths more than 3/4 inch should be rejected.

Internal Product Characteristics. Frankfurters should have a normal color, have good cohesion typical of the product, and have a smooth fine texture. Products with a cut surface having more than two pockets of fat, gelatin, or air that individually measure 0.2 inch or more or one or more pieces of material measuring more than 0.2 inch which will not break up when subjected to pressure from the flat surface of a knife should be rejected.

Packaging: Size package depends upon form, fresh, or frozen, in which meat is purchased and the buyer's needs.

One or Two-Pound Package: One or two pounds of product shall be packaged into a moisture-vapor proof film of a type normally used for packaging frankfurters.

Cartons: Ten pounds of product shall be snugly packaged into a carton of the type normally used for bulk packaging of frankfurters.

Frozen Frankfurters: Within 24 hours after peeling, product properly packaged and packed shall be placed in a wind tunnel or sharp freezer having forced air circulation and a temperature not higher than 0°F. The circulation of air and the dunnage between layers of boxes shall be sufficient to insure that the product will be rapidly frozen. However, the product may be frozen by any other method giving equivalent results. Product shall be maintained under these conditions until the internal product temperature is 15°F or lower following which the dunnage may be removed and the product restacked in an area without forced air circulation. The finding of any product above 15°F not meeting any one or more of the above requirements shall cause rejection of the involved production lot.

It shall be the vendor's responsibility to hold the frozen product at a uniform storage temperature of 0°F or lower until time of shipment. At the time of shipment, the product shall show no evidence of defrosting, refreezing, or freezer deterioration. Presence of frankfurters showing deviations from these requirements shall cause rejection of the involved production lot. The vendors shall assure that the truck or rail car in which the product is to be shipped is mechanically refrigerated and is capable of maintaining a temperature of 0°F or lower during shipment. Before being loaded, the truck or rail car shall be pre-cooled by its self-contained refrigeration equipment to a temperature not higher than 15°F.

Liver Sausage (Braunschweiger)

Purchase Units:
Pound or sticks, 5–8 pounds per stick

Form: Fresh or Frozen

Formula: (Major ingredients only)
Pork livers, pork
Pork livers, pork plus nonfat dry milk
Pork livers, pork with smoked jowls and/or bacon ends and pieces
Pork livers, pork with smoked jowls and/or bacon ends and pieces plus nonfat dry milk

Recommended Points for Specifications:
Liver sausage is a cooked sausage with a smoked characteristic which may be imparted by smoking, by adding smoked meats to the formula, or a combination of both. The meat components consist of pork with smoked jowls and/or bacon ends included in some formulas. These are combined with pork livers, finely communited and stuffed in artificial or natural casings. Onion shall be included as a seasoning. Sticks measure from 2 to 3 inches in diameter. The interior cut surface is fine-textured and light reddish-brown in color.

Institutional Meat Purchase Specification No: 803

Meat Food Product Loaves

Pimento Loaf
Pickle and Pimento Loaf
Pickle Loaf
Olive Loaf
Pepper Loaf
Cheese Loaf
Macaroni and Cheese Loaf
Liver Loaf

Purchase Units:
Pound or loaves, 4–8 pounds per loaf

Form: Fresh or Frozen

Class:
Smoked
Unsmoked
Browned in hot oil or fat

Shape:
Rectangular
Rounded

Type:
Baked (dry heat)
Cooked (moist heat)

Recommended Points for Specifications:
Meat food product loaves are baked (dry heat) or cooked (moist heat) products. Beef, pork and veal may be used singly or in any combination. Other ingredients such as meat by-products, pickles, pimentos, cheese, nuts, etc., are added as applicable except that lungs, spleens, tripe, udders, blood, skin, cracklings, brains, lips, ears, snouts, kidneys, tongue trimmings, and meat and meat by-

products from lamb, yearling mutton, mutton, and goats shall not be used in preparing the loaf. Nonfat dry milk may be added. The exterior surface may be smoked, unsmoked, or browned in hot oil or fat. The other ingredients shall be distributed uniformly throughout the entire surface. The individual loaves are encased or wrapped in grease and moisture resistant paper or plastic film.

Meat food product loaves must be specified by name. (For example: pickle loaf, ham and cheese loaf, etc.) Any meat food product loaf not listed above may be ordered. However, if the name is inadequate to appropriately identify the product, the purchaser may be requested to furnish additional information to establish a definite basis for identification.

Institutional Meat Purchase Specification No: 815

Meat Loaves

Purchase Units:
Pound or loaves, 4–8 pounds per loaf

Form: Fresh or Frozen

Class:
Smoked
Unsmoked
Browned in hot oil or fat

Shape:
Rectangular
Rounded

Type:
Baked (dry heat)
Cooked (moist heat)

Formula: (Major ingredients only)
Pork, veal (pork is predominant)
Pork, veal (pork is predominant) plus nonfat dry milk
Pork, beef (pork is predominant)
Pork, beef (pork is predominant) plus nonfat dry milk
Pork, beef, veal
Pork, beef, veal plus nonfat dry milk
Pork
Pork plus nonfat dry milk
Veal
Veal plus nonfat dry milk
Beef
Beef plus nonfat dry milk
Ham
Ham plus nonfat dry milk

Recommended Points for Specifications:
Meat loaves are baked (dry heat) or cooked (moist heat) products. The meat components are finely comminuted beef, pork, and veal. Meat loaves may be rectangular or rounded in shape. The exterior surface may be smoked, unsmoked, or browned in hot oil or fat. The interior cut surface is smooth, fine-textured, light pink in background color, and finely mottled with evenly distributed light to dark red flecks. The individual loaves are encased or wrapped in grease and moisture resistant paper or plastic film.

Institutional Meat Purchase Specification No: 814

Minced Luncheon Meat

Purchase Units: Sticks, 5–10 pounds per stick

Form: Fresh or Frozen

Shape:
Rectangular
Rounded

Formula: (Major ingredients only)
Pork, beef, (pork is predominant)
Pork, beef (pork is predominant) plus nonfat dry milk
Pork, beef, pork heart meat
Pork, beef, pork heart meat plus nonfat dry milk

Recommended Points for Specifications:
Minced luncheon meat is a smoked, cooked sausage. The meat components consist of moderately coarse-cut pork and finely comminuted beef with pork heart meat included in some formulas. The product is stuffed in artificial casings. Stuffed round casings shall measure from 3.5 to 4.5 inches in diameter. When the stuffed casings are formed into rectangular shapes by wire or metal molds, they shall measure from 3 to 4 inches in width and depth. The interior cut surface is moderately fine-textured and light pink in color.

Institutional Meat Purchase Specification No: 805

Polish Sausage

Purchase Units:
Pound: Incasing, 3–5 or 11–13 inches in length

Form: Fresh or Frozen

Formula: (Major ingredients only)

Pork
Pork, beef (pork is predominant)

Recommended Points for Specifications:
Polish sausage is a smoked, cooked, linked sausage. The meat components consist of moderately coarse-cut pork or moderately coarse-cut pork with finely comminuted beef. Seasoning includes garlic. The product is stuffed in hog casings or equivalent diameter collagen casings. The links are moderately uniform in length and diameter. The

interior cut surface is moderately coarse in texture with a uniform distribution of white fat particles throughout medium to dark reddish-brown meat.

Institutional Meat Purchase Specification No: 813

Pork Sausage

Purchase Units:
Pound: Incasing, 6–8, 8–10, 10–12, 12–14, or 14–16 links per pound
Skinless, 8, 9, 10, 12, or 16 links per pound
Cloth bags, 5 or 7 pounds per bag
Bulk, 5, 6, 8, or 10 pound units

Form: Fresh or Frozen

Recommended Points for Specifications:
Pork sausage is a fresh, all pork product. The meat is chopped or ground to a moderately coarse texture and mixed with salt and spices. Pork sausage may be packed in bulk, formed mechanically, or stuffed in artificial or natural casings. The links, rolls, and bags are moderately uniform in length and diameter. For product in unlinked hog casings no more than one piece shall be less than 12 inches in length in a primary container.

Institutional Meat Purchase Specification No: 802

Salami, Cooked

Purchase Units:
Pound: Slices, 7–12 pounds

Form: Fresh or Frozen

Formula: (Major ingredients only)
Pork and beef
Pork and beef and heart meat

Recommended Points for Specifications:
Cooked salami is a smoked, cooked sausage. The meat components consist of moderately coarse-cut pork and finely comminuted beef with finely comminuted beef heart meat included in some formulas. Seasoning includes garlic and peppercorns. Salami is stuffed in artificial casings and measures from 3.5 to 4.5 inches in diameter. The interior cut surface is moderately coarse in texture and light to dark reddish-brown in color.

Institutional Meat Purchase Specification No: 804

Meat Food Products

To be labeled with a particular name, such as "Beef With Gravy" a federally inspected meat product must be approved by the U.S. Department of Agriculture as meeting specific product requirements. Following are products for which percentages of meat or other ingredients have been established. This list does not include all products for which requirements have been set, nor does it necessarily include all requirements for those products that are listed.

All percentages of meat are on the basis of fresh *uncooked* weight unless otherwise indicated. "Food Buying Guide for Type A School Lunches," PA–270, provides information on yields and credit toward the Type A pattern of many of the products listed below.

Barbecued Meats. Weight of meat when barbecued can't exceed 70 percent of the fresh uncooked meat. Must have barbecued (crusted) appearance and be prepared over burning or smoldering hardwood or its sawdust.

Barbecue Sauce with Meat. At least 35 percent meat (cooked basis).

Beans with Bacon in Sauce. At least 12 percent bacon.

Beans with Frankfurters in Sauce. At least 20 percent franks.

Beans with Ham in Sauce. At least 12 percent ham.

Beef and Dumplings with Gravy or Beef and Gravy with Dumplings. At least 25 percent beef.

Beef with Barbecue Sauce. At least 50 percent beef (cooked basis).

Beef with Gravy. At least 50 percent beef (cooked basis.) Gravy with Beef. At least 35 percent beef (cooked basis).

Brunswick Stew. At least 25 percent of at least two kinds of meat or poultry. Must contain corn as one of the vegetables.

Chili Con Carne. At least 40 percent meat.

Chili Con Carne with Beans. At least 25 percent meat.

Chopped Ham. Must be prepared from fresh, cured, or smoked ham, plus certain kinds of curing agents, and seasonings. May contain dehydrated onions, dehydrated garlic, corn syrup, and not more than 3 percent water to dissolve the curing agents.

Corned Beef and Cabbage. At least 25 percent corned beef (cooked basis).

Corned Beef Hash. At least 35 percent beef (cooked basis). Must contain potatoes, curing agents, and seasonings. May contain onions, garlic, beef broth, beef fat, or others. No more than 15 percent fat, no more than 72 percent moisture.

Frankfurter, Bologna, and Similar Cooked Sausage. May contain only skeletal meat. No more than 30 percent fat, 10 percent water and 2 percent corn syrup. No more than 15 percent poultry meat (exclusive of water in formula).

Frankfurter, Bologna, and Similar Cooked Sausage

with Byproducts or Variety Meats. Same limitations as above on fat, added water and corn syrup. Must contain at least 15 percent skeletal meat. Each byproduct or variety meat must be specifically named in the list of ingredients. These include hearts, tongue, spleen, tripe, stomachs, etc.

Frankfurter, Bologna, and Similar Cooked Sausage with Byproducts or Variety Meats and Which Also Contain Nonmeat Binders. Product made with the above formulas and also containing up to 3½ percent nonmeat binders (or 2 percent isolated soy protein). These products must be distinctively labeled, such as "frankfurters with byproducts, nonfat dry milk added." The binders must be named in their proper order in the list of ingredients.

Goulash. At least 25 percent meat.

Ham, Canned. Limited to 8 percent total weight gain after processing.

Ham A La King. At least 20 percent ham (cooked basis).

Ham Salad. At least 35 percent ham (cooked basis).

Ham Spread. At least 50 percent ham.

Hash. At least 35 percent meat (cooked basis).

Lima Beans With Ham or Bacon in Sauce. At least 12 percent ham or bacon.

Meat Salads. At least 35 percent meat (cooked basis).

Meat Spreads. At least 50 percent meat.

Meat Taco Filling. At least 40 percent meat.

Pork With Barbeque Sauce. At least 50 percent pork (cooked basis).

Pork and Dressing. At least 50 percent pork (cooked basis).

Pork with Dressing and Gravy. At least 30 percent pork (cooked basis).

Scalloped Potatoes and Ham. At least 20 percent ham (cooked basis).

Stews (Beef, Lamb, and the Like). At least 25 percent meat.

Swiss Steak with Gravy. At least 50 percent meat (cooked basis).

Gravy and Swiss Steak. At least 35 percent meat (cooked basis).

General Information on Cheese

Over 300 varieties and types of cheese are known throughout the world. Cheese is eaten by many national groups. It is an economical source of complete protein and other essential nutrients. The flavor and texture of cheese make it of value for combining with other foods. To purchase cheese properly, a buyer should know the kinds available, their use, and the factors that make for quality in each. Cheese is produced in many shapes and sizes. If the term "process" or "processed" is used in relation to the variety of cheese, it means that the cheese has been blended, emulsifiers added, and the product heated to form a uniform mixture, as stated on the label.

The Federal Government has established standards of identity for cheese which control the moisture and fat allowed in the cheese as well as the processing methods. Whole, partially defatted, or nonfat milk may be used, depending upon the type of cheese to be made. Cheese is generally made from pasteurized milk which must be of good quality. Cheddar cheese and other American types may be cured for at least 60 days at not less than 35 F if made from unpasteurized milk. Colorings approved by the Food and Drug Administration may be added.

Kinds of Cheese or Cheese-Type Foods

Cheese is classified as (1) soft, unripened, like cottage or cream cheese; (2) firm, unripened, like Mozzarella; (3) semisoft, ripened, like Brick or Munster; (4) firm ripened, like Cheddar, Colby, Swiss or Provolone; (5) very hard ripened, like Parmesan or Romano; (6) blue-vein mold ripened, like Blue or Roquefort. The common types of cheese and related products are as follows:

Cheddar. This cheese is usually made of whole milk. Cheddar is named for the village in England where it was first made. It is sometimes identified by terms that relate to the shape and style, such as blocks, Daisy, or Longhorn, and is often identified as to the locality where it is produced, such as Wisconsin, New York, or Oregon. Aged Cheddar is preferable as an eating cheese by some people.

Pasteurized Process Cheese. This cheese is a blend of two or more lots of cheeses. The cheeses are ground and heated with the addition of an emulsifier, then poured into convenient packages. The emulsifier prevents the separation of fat during processing and produces desirable slicing and melting qualities in the finished cheese. The advantages of using process cheese are that the loaf shape permits uniformity in serving portions, there is less waste, the cheese keeps well because the ripening process has been checked, the flavor is uniform (the cheese does not change flavor after manufacture), and it melts easily and does not become oily.

Pasteurized Process Cheese Foods. These cheese foods are similar to process cheese but contain less fat, added milk solids, and more moisture.

Pasteurized Process Cheese Spreads. Cheese spreads resemble process cheese foods except that the moisture content is higher and the milk fat content is lower.

Cottage Cheese. This is soft-curd cheese made of skim milk. Cottage cheese has a cream dressing added.

Cheese Alternate. In 1974, The Food and Nutrition Service of the USDA approved the use of "cheese alternate products" as an alternate cheese-type food for the meat/meat alternate component for the Type A school lunch. This product is derived from animal protein sources and lipid materials and combined with water; fats or oils; salts; carbohydrates, vitamins, and minerals as specified in standards set by Food and Nutrition Service. Cheese alternate products must be prepared and served in combination with natural and processed cheese to be credited in the Type A lunch.

Inspection and Grading

Buyers should ascertain what the local and State codes are before establishing their specifications for dairy products, such as cheese, for they may differ, depending on State and local regulations. Specifications should state that all dairy products shall be produced and handled in accordance with the best sanitary practices, and manufacturing and processing plants shall be listed in Dairy Plants Surveyed and Approved for USDA Grading Service. The official U.S. Department of Agriculture grades are AA, A, B, and C. Cheddar cheese is graded on the basis of body, texture, flavor, color, and general appearance. All grades contain not more than 39 percent moisture. The cheese solids should not be less than 50 percent. Fat content is generally around 33.0 to 34.0 percent. Only Cheddar cheese that has been graded by USDA should be purchased. Officially graded Cheddar cheese may be marked with the shields shown below.

USDA U.S. GRADE AA WHEN GRADED PACKED UNDER INSPECTION OF THE U.S. DEPT. OF AGRICULTURE OFFICIALLY GRADED

USDA U.S. GRADE A WHEN GRADED PACKED UNDER INSPECTION OF THE U.S. DEPT. OF AGRICULTURE OFFICIALLY GRADED

USDA Grade standards for Swiss cheese are U.S. Grade A, B, C, and D. Quality is determined on basis of flavor, body, eyes and texture, finish, appearance, salt, and color. Only Swiss cheese that has been graded by USDA should be purchased.

Processed and cottage cheeses have no official grades, however, they may be marked with the shield as shown, indicating that they are USDA approved.

USDA QUALITY APPROVED U.S. DEPT. OF AGRICULTURE GRADING AND QUALITY CONTROL SERVICE OFFICIALLY INSPECTED

Cheese, American Processed

Purchase Units: Slices, 2-, 5-, 10-pound loaves

Description: Process or processed cheese is a melted pasteurized blend of cheese and emulsifiers with or without added optional ingredients. The most common process cheese is made from Cheddar cheese, Colby, washed curd and/or stirred curd cheeses(commonly known as American cheese). It is labeled "pasteurized process American cheese." It may also be manufactured from other varieties of cheese and the varieties used are included on the label. Buy process cheese that is USDA approved and that best suits the menu item for which it is intended.

Specify: USDA inspected processed cheese from an USDA approved plant.

Federal Standards of Identity: Code of Federal Regulations, 21, Food and Drugs, Part: 19.750.

Cheese, Cottage

Purchase Units:
Packaged in rigid paper or metal containers holding from 5 to 30 pounds.

Type: Cottage cheese is a soft uncured cheese made from pasteurized milk (not more than 80 percent moisture).

Curd Size: Small and large curd. The small-curd cottage cheese has particles about one-eighth to one-fourth of an inch in size compared to the large-curd cottage cheese with curd particles up to three-eighths of an inch in size.

Style: Cottage cheese has a cream dressing and salt added to the dry curd particles.

Watch For: Off-color, excessive acid, off-flavor which may be yeasty, fruity, feed, mold, etc. Excessive moisture, hard curd or excessively dry, grainy or gritty cheese. Broken or shattered curds.

Federal Standards of Identity: Code of Federal Regulations, 21, Food and Drugs, Part: 19.530.

Cheese, Cottage, Dry Curd

Purchase Units:
Packaged in rigid paper or metal containers holding from 5 to 30 pounds.

Type: Dry curd cottage cheese is a soft uncured cheese made from pasteurized milk (not more than 80 percent moisture and not less than 0.5 percent milk fat).

Curd Size: Small and large curd. The small curd cottage cheese has particles about one-eighth to one-fourth of an inch in size compared to the large curd cottage cheese with curd particles up to three-eighths of an inch in size.

Style: The cottage cheese has no cream dressing added.

Watch For: Off-color, excessive acid, off-flavor which may be yeasty, fruity, feed, mold, etc. Excessive moisture, hard curd or excessively dry, grainy or gritty cheese. Broken or shattered curds.

Federal Standards of Identity: Code of Federal Regulations, 21, Food and Drugs, Part: 19, 525.

Cheese, Cheddar (Natural)

Purchase Units:
The most popular sizes are the 20- to 60-pound sizes, both cylindrical and rectangular.

Grade: U.S. Grade AA, A

Moisture Content: Not more than 39 percent moisture.

Milk Fat Content: Not less than 50 percent milk fat on the solids basis.

The AA Cheddar cheese will possess a clean, pleasing, nut-like flavor, and a compact body and texture. The grade A cheese may possess slight acid, slight feed or slight butter flavors and slight body and texture defects.

Age and Market Terminologies: The longer the cheese is aged the sharper will be the flavor.

Age (generally)	Market Flavor Terminologies
Under 3 months	Fresh or current
3–6 months	Medium or mellow
Over 6 months	Aged or sharp
Over 12 months	Very sharp

Recommended Points for Specifications:
USDA Graded Cheddar cheese. Purchase U.S. Grade AA, or A Cheddar cheese for school food service.

Specify the grade and market flavor (age of Cheddar cheese) that best suits the menu item for which it is intended. (An aged Cheddar cheese melts more rapidly and smoothly than does a fresh or current Cheddar cheese.)

Watch For: Imitation cheeses. If the label doesn't say cheese, it can't be counted as cheese in the Type A lunch.

The table below shows the more popular styles of Cheddar cheese produced in the United States.

Style	Shape	Diameter	Approximate Weights
Square Prints	Rectangular	varies	5–20 pounds
Block	Rectangular		40 pounds
Longhorn	Cylindrical	6 inches	12–13 pounds

Federal Standards of Identity: Code of Federal Regulations, 21, Food and Drugs, Part: 19.500

Cheese, Low Moisture Mozzarella

Purchase Units: Pound

Form: Cuts, Slices or Shredded

Moisture Content: Not more than 52 percent nor less than 45 percent moisture.

Milk Fat Content: Not less than 45 percent calculated on solids basis.

Low moisture Mozzarella is made from milk. This unripened cheese has a delicate, mild flavor and a slightly firm, plastic texture, and a creamy white color. Low moisture Mozzarella is a specialty cheese perferred for use in menu items such as pizza.

Watch For: Imitation cheeses. If the label doesn't say cheese, it can't be counted as cheese in the Type A lunch.

Federal Standards of Identity: Code of Federal Regulations, 21, Food and Drugs, Part: 19.605

Cheese, Swiss

Purchase Units: Pound

Grade: U.S. Grade A

Form: Cuts and Slices

Moisture Content: Not more than 41 percent moisture

Milk Fat Content: Not less than 43 percent milk fat calculated on solids basis.

Swiss cheese is made from pasteurized cow's milk. It should have a sweet, nut-like flavor and be firm, smooth with uniform eye formation. It should be a light yellow color.

These cheeses are aged to develop the typical Swiss flavor. Aging is usually 3 to 9 months with a minimum of 60 days. Swiss cheese is a specialty cheese used in such menu items as sandwiches, chef salad, etc.

Specify: USDA Grade A Swiss cheese.

Watch For: Imitation cheeses. If the label doesn't say cheese, it can't be counted as cheese in the Type A lunch.

Federal Standards of Identity: Code of Federal Regulations, 21, Food and Drugs, Part: 19.540

Cheese Food

Purchase Units: Pound

Form: Slices, Rolls, Links, and Loaves

Moisture Content: Not more than 44 percent moisture.

Milk Fat Content: Not less than 23 percent milk fat.

Recommended Points for Specifications:
Process cheese food is very similar to process cheese except that it is a slightly softer product due to its higher moisture content. It contains some type of added milk solids in addition to the cheese used to make the product.

Cheese food is milder in flavor, spreads more easily, and melts quicker than process cheese.

Consider the properties of cheese food before determining its use. *Remember*, to receive 1 ounce of meat or alternate credit in Child Nutrition Programs 2 ounces of cheese food must be served.

Specify USDA inspected processed cheese food from a USDA approved plant.

Federal Standards of Identity: Code of Federal Regulations, 21, Food and Drugs, Part: 19.765

Cheese Spread

Purchase Units: Pound

Form: Loaves

Moisture Content: Not less than 44 percent moisture nor more than 60 percent.

Milk Fat Content: Not less than 20 percent milk fat.

Recommended Points for Specifications:

Cheese spread must be at least 65 percent cheese. Additional milk ingredients may consist of nonfat milk solids. Whey may be substituted equivalent to not more than 50 percent of such milk solids. The color of the cheese should be medium yellow.

This product is similar to process cheese food except it contains a still higher moisture content. Frequently, process cheese spreads are of such consistency that they can readily be spread with a knife.

The flavor of pasteurized process cheese spread depends largely on the flavor of the cheese used which may be modified by flavoring materials added.

Consider the properties of cheese spread before determining its use. *Remember*, to receive 1 ounce of meat or alternate credit in Child Nutrition Programs 2 ounces of cheese spread must be served.

Specify USDA inspected processed cheese spread from a USDA approved plant.

Federal Standards of Identity: Code of Federal Regulations, 21, Food and Drugs, Part: 19.775

Cheese Alternate Products

Purchase Units: Pound

To be credited as a meat alternate in Child Nutrition Programs, Cheese Alternate Products must:

1. Meet specifications defined by USDA in the Federal Register, August 29, 1974.

2. Be used in combination with natural or processed cheese which meet Food and Drug Administration's (FDA) Standards of Identity for cheese or processed cheeses. The product shall not exceed the quantity by weight of natural or processed cheese.

3. Be prepared so that the Cheese Alternate Products and natural or processed cheese are combined in the cooking or heating process in such menu items as macaroni and cheese, cheeseburgers, enchiladas, pizzas, etc.

4. Be labeled as follows, "This product meets FNS/USDA specifications for cheese alternate products."

Recommended Points for Specifications:
The product must have been accepted by FNS/

USDA for use in Child Nutrition Programs.
The product must meet specifications defined in the Federal Register, August 29, 1974.
The product must be labeled as required by FNS/USDA.

Note: A listing of acceptable cheese alternate products is available through the State Agencies or FNS Regional Offices.

General Information on Eggs and Egg Products

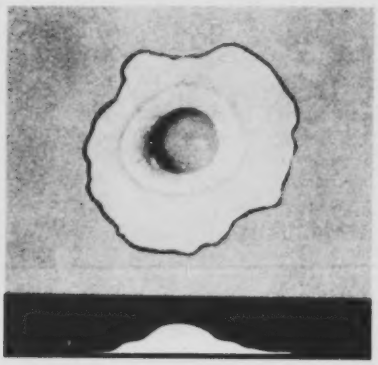
Few foods journey from the farm to the school food service kitchen with as little additional processing as does the egg. The shell provides the principal reason. It is not a perfect package, but the fact that eggs continue to be marketed in shell form is a good indication of how practicable it is. Also, few foods as perishable as eggs can offer as long a shelf life, if a relatively few commonsense rules regarding their care and handling are followed.

Fresh Shell Eggs

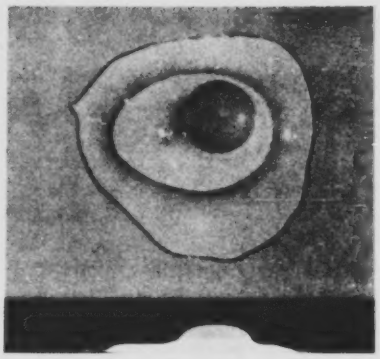
The U.S. Department of Agriculture's Agricultural Marketing Service provides voluntary grading service for shell eggs. The official grade shield certifies that the eggs have been graded for quality and size under Federal-State supervision. The official grade shield is shown below.

Grades refer to the interior quality (see broken-out appearances) and condition and appearance of the shell. The official grades are U.S. Grade AA, U.S. Grade A, and U.S. Grade B.

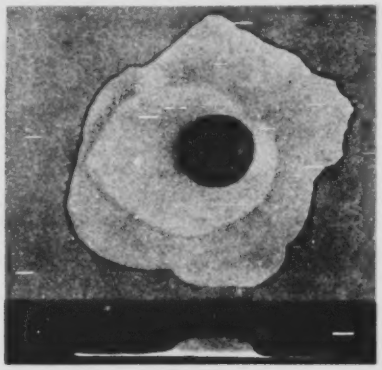
U.S. Consumer Grades



Grade AA
Egg covers small area; white is thick, stands high; yolk is firm and high.



Grade A
Egg covers moderate area; white is reasonably thick, stands fairly high; yolk is firm and high.



Grade B
Egg covers wide area; has small amount of thick white; yolk is somewhat flattened and enlarged.

Weight Classes Or Sizes

Shell eggs are also graded according to size which is based on the minimum weight per dozen. Size and quality are not related. They are entirely different. For example, large eggs may be of high or low quality; high quality eggs may be of any size—from jumbo to peewee. There are six official U.S. Weight Classes or Sizes.

Shell Eggs

U.S. weight classes or sizes	Minimum weight per dozen	Minimum weight per 30-dozen case
Jumbo	30 ounces	56 pounds
Extra Large	27 ounces	50½ pounds
Large	24 ounces	45 pounds
Medium	21 ounces	39½ pounds
Small	18 ounces	34 pounds
Peewee	15 ounces	28 pounds

The sizes most often available are Extra Large, Large, and Medium.

Size and Price

In purchasing shell eggs, the size and grade should be considered in relation to use and price. Compare prices for different sizes of the same grade. The

best comparison is on a pound basis. For example, a dozen large eggs (1½ pounds) at $0.80 would be equivalent to $0.53 per pound. In some areas, shell color may also affect the price but it has no affect on the grade, nutritive value, flavor, or cooking performance of the egg.

Acceptance Service for Eggs

The USDA acceptance service is also available for shell eggs. For service and additional information contact the appropriate regional office of USDA's Agricultural Marketing Service (AMS) as listed on page 133 in the appendix.

Shell egg specification should include U.S. grades and U.S. weight classes. Purchase only clean, sound, refrigerated shell eggs. Do not purchase cracked or dirty eggs.

Refrigerate promply upon delivery to help maintain quality.

Egg Products

The convenience which is associated with the use of egg products makes them popular with school food service personnel. When they are properly prepared, egg products equal fresh eggs in nutritional and cooking qualities.

Egg products are commercially available in a variety of forms to suit the particular needs of the user. Liquid eggs, frozen eggs, and dried eggs may be purchased as whole eggs, whites, or yolks. There are also certain blends such as salted or sugared yolks.

Inspection of Egg Products

Under the Egg Products Inspection Act, plants that break and further process shell eggs into liquid, frozen, or dried egg products must operate under the continuous mandatory inspection program of the U.S. Department of Agriculture's Agricultural Marketing Service. Pasteurization is required for all egg products. The law applies to all egg-breaking plants, and to those selling products locally, across State lines, and in foreign commerce. The law further stipulates that all users of processed egg products must obtain such products from plants operating under continuous inspection.

Officially inspected egg products will bear the U.S. Department of Agriculture's inspection mark. The USDA inspection mark on the container means that the egg products were processed under continuous supervision of a USDA-licensed inspector, processed in a sanitary manner in an approved plant with proper facilities, and pasteurized in accordance with USDA's Egg Products Inspection Act.

Official Egg Products Inspection Mark

Voluntary inspection on a fee-for-service basis is also available for certain products and services not covered by the mandatory program.

In the appendix of this publication on page 134, there is a partial listing of companies processing dried egg products under USDA supervision.

For further information concerning egg products inspection see listing of regional offices of USDA's AMS on page 133 in the appendix.

Eggs, Fresh, Shell

Purchase Units:
Dozen: 30 dozen per case
or half cases of 15 dozen.

Size: Large

Grade:
U.S. Grade AA, and A when appearance is important.
U.S. Grade B for general cooking and baking.

Recommended Points for Specifications:
Product shall consist of fresh, natural or shell protected eggs held under appropriate temperature and humidity conditions. Product shall be uniform in size, clean, sound-shelled, edible, and free from foreign odors or flavors.

Select the grade that is appropriate for use intended.

Specify size. USDA recipes are based on the use of large size eggs.

Eggs should be packed in snug-fitting, fiberboard boxes with a center partition. Packing materials shall not impart any off odors or flavors. *or* Eggs should be packed into a standard commercial shipping container with new or good used packaging materials.

Use of new cases or good used cases keeps breakage of eggs to a minimum and keeps eggs clean.

Specify delivery, as quality declines with time. Frequent delivery reduces need for holding space.

Egg Products

Purchase Units: 3-, 50-, or 150-pound containers

Form: Dried

Types: Whole eggs, egg yolks, egg whites, and various blends.
All dried egg products shall be produced under continuous Government inspection and bear the official USDA egg products shield. Products shall be certified Salmonella negative by the USDA. The maximum moisture content of dried whole eggs shall be 4.0 percent, dried yolks 4.0 percent, and spray dried egg whites 8.0 percent.

Note: Store unopened dried egg products in the refrigerator at 36°–45° F or in a dry, cool place where the temperature is not more than 50° F. Reconstitute only the amount needed at one time. Use reconstituted eggs immediately, or refrigerate promptly in an airtight container and use within 1 hour. After opening, refrigerate any unused portion in a container with close-fitting lid. If not covered tightly, dried egg solids absorb moisture and odors, become lumpy, will not mix readily with liquid.

Egg Products

Purchase Units:
3-, 5-, 10-, 30-, or 45-pound containers

Form: Frozen

Type: Whole mixed; egg yolks; egg whites; blends such as sugared yolks, salted yolks, blends of whole eggs or yolks with other ingredients.

Recommended Points for Specifications:
All frozen egg products shall be produced under continuous Government inspection and bear the official USDA egg products inspection shield. Frozen egg products shall be prepared from shell eggs meeting the USDA standard quality requirements for US Grade A interior quality or better at time of candling. Frozen whole eggs (bakery type) consist of a homogeneous mixture of whites and yolks in their natural proportions with not less than 24.70 percent egg solids. Frozen egg whites consist of whites free from visible yolks and contain not less than 11.5 percent egg solids. Frozen egg yolks, sugared, consist of a homogeneous mixture of liquid yolks and added sugar, and contain not less than 38.7 percent (43 percent on a sugar free basis) egg solids, not less than 48.5 percent total solids and 10.0 percent ± 0.2 percent sugar. Finished product shall be free from blood and meat spots, shell particles, paper and packaging materials and other foreign matter, foreign odors and objectionable flavors, both in the frozen form and when properly thawed and tested. Products shall be certified Salmonella negative by the USDA.

Note: Frozen egg products deteriorate rapidly after thawing if they are mishandled. Store frozen egg products at 0° F or below. Thaw only the amount of frozen eggs needed at one time. Thaw frozen egg products in the refrigerator. Use thawed eggs immediately or refrigerate promptly in airtight containers and use within 24 hours.

General Information on Poultry

Poultry is a well-liked menu item and lends itself to many types of preparation. Availability is not a seasonal factor since processing, grading, packaging, and freezing procedures make it possible to buy the desired kind, quality, size, class, and quantity at any time. The kinds of poultry refer to the different species such as chicken, turkey, duck, goose, and guinea. The class indicates physical characteristics due to age and sex.

Classes

Within each kind of poultry there are various classes. The age or class indicates the degree of tenderness and suggests ways to cook the poultry for maximum flavor and tenderness. Poultry is usually labeled according to age with the following terms.

Young Classes

Young Chicken which may also be labeled Rock Cornish Game Hen, Broiler or Fryer, Roaster, or Capon.

Young Turkey which may also be labeled Fryer-Roaster, Young Hen or Young Tom.

Young Duck which may also be labeled Broiler or Fryer Duckling, or Roaster Duckling.

Young Goose or Young Guinea.

Mature Classes

Mature Chicken which may be labeled Hen, Stewing Chicken, or Fowl.

Mature Trukey which may be labeled Yearling or Old Turkey.

Mature Duck, Goose, or Guinea which may be labeled "Old."

There is a great variety of poultry products available today. These include ready-to-cook (whole birds or parts, chilled or frozen) and convenience foods (dinners, pies, fricassees, rolls, canned products, etc.) Some freeze-dried and smoked poultry are also available.

Packing

Ready-to-cook poultry is packed either fresh-chilled or frozen. Fresh-chilled poultry is generally packed in ice, carbon dioxide (CO_2), or chill-packed without a cooling media. Most turkeys, ducks, geese, and guineas are sold as frozen products. Fresh-chilled poultry should be cooked promptly after receiving. Frozen poultry should be delivered at least 2 days before preparation to allow time for thawing. Cook promptly after thawing.

Inspection

All poultry and poultry products (chickens, turkeys, ducks, geese, and guineas) processed in plants selling in interstate or foreign commerce must, by law, be inspected for wholesomeness by the U.S. Department of Agriculture. Over 85 percent of all poultry sold off farms is inspected under this program. The inspection mark means that each bird has been individually examined by a USDA inspector to determine that it is wholesome and safe for human food and that the product:

- Was processed in a sanitary manner in an approved plant with proper facilities.
- Is not adulterated.
- Is truthfully and informatively labeled.

The official inspection mark for wholesomeness is in the form of a circle as illustrated below.

Official Poultry Inspection Mark

The inspection mark may be found:

- On ready-to-cook poultry, chilled or frozen; on the overwrap or transparent wrapper; on a wing tag; on the giblet wrap; or on a insert in the package. It is usually on all bulk shipping containers.
- On further-processed poultry food products, frozen, canned, or dehydrated; on the carton, can, or package label.

There are no levels of wholesomeness. The poultry is either wholesome or it is condemned as unfit for human food. The inspection mark refers only to wholesomeness of the product, not to the quality of the product.

Grading

The U.S. Department of Agriculture's Agricultural Marketing Service, (AMS), provides a voluntary grading service for poultry. Any kind of chilled or frozen ready-to-cook poultry or poultry parts (including chickens, turkeys, ducks, geese, and guineas) may be graded for quality, provided the poultry has first passed the rigid inspection for wholesomeness. In addition, there are grade standards for raw ready-to-cook deboned poultry roasts and rolls.

Quality refers to the degree of excellence of the product and is determined by such factors as conformation, fleshing, fat covering, and freedom from various types of defects such as cuts, tears, bruises, broken bones, etc.

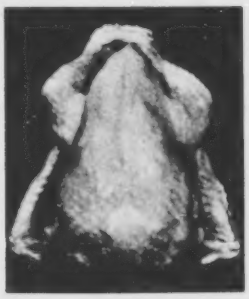
Grading for quality is not required by law but many firms choose to have their poultry graded, and many retailers sell only USDA-graded poultry and poultry parts. The official USDA grade mark is in the form of a shield as illustrated below.

Official Poultry Grade Mark

This mark shows the grade or quality of the poultry as certified by a highly qualified Government grader. Grades for ready-to-cook poultry are: U.S. Grades A, B, and C, and Procurement Grades I and II.

Young Turkeys

U.S. Grade A



- *Full fleshed and meaty*
- *Well finished*
- *Attractive appearance*

U.S. Grade B

- *Slightly lacking in fleshing, meatiness, and finish*
- *Some dressing defects*

U.S. Grade A poultry, the highest quality, is suggested for items which are to be served whole, halved, or quartered. U.S. Grade B and Procurement Grades I and II may provide a saving when appearance is not so important, such as when poultry is used in casseroles, salads, etc.

Acceptance Service

USDA has an acceptance service for poultry designed especially to aid large quantity food buyers. To use the USDA acceptance service, the

buyer writes specifications indicating the kind, type, class, size, and quality of the items needed and specifies that each delivery shall be examined for contract specifications by a Federal-State grader prior to delivery. The charge for use of this service may be borne by either the buyer or supplier, whichever is specified in the contract. A USDA grader is available to help write specifications. For service and additional information contact the appropriate regional office of USDA's AMS as listed on page 133 in the appendix

When poultry is bought on the basis of contract specifications, an official grader in USDA's Agricultural Marketing Service or cooperating State agency will examine the product according to specifications and certify that it is "accepted." He applies an official acceptance stamp as shown below. If the product does not meet the buyer's specifications, it will be rejected.

Acceptance Stamp

Points to Include in Poultry Specifications

Clear-cut specifications enable the buyer to obtain competitive bids from several suppliers. Poultry specifications should include the following information:

Kind—refers to chickens, turkeys, ducks, geese, and guineas.
Type—indicates whether the poultry is fresh-chilled or fresh-frozen.
Class—refers to the age of poultry.
Size or weight—indicates weight of individual poultry.
Grade—refers to quality of the product based on such factors as fleshing, fat covering, and freedom from defects such as cuts, tears, and discolorations.
Specific name of product—refers to further processed items.

Chicken, Fresh or Frozen

Purchase Units: 15-, 30-, or 60-pound cartons

Grade: U.S. Grade A

Class: Broiler-Fryers

Style: Ready-to-Cook, Cut-up or Parts

Weight of Carcass: Not less than $2^1/_2$ pounds or more than $3^1/_4$ pounds.

Recommended Points for Specifications:

Processing: The chickens should be processed in plants operating under USDA's Animal and Plant Health Inspection Service (Meat and Poultry Inspection) and Agricultural Marketing Service (Poultry Grading Programs).

Cutting: The chickens shall be cut in such a way as to produce parts described in either one of the following styles:

Eight-Piece Cut: The chicken shall be cut to yield two drumsticks, two wings, two front quarters minus wings, and two rear quarters minus drumsticks. The carcass, when split, shall result in two approximately equal portions, and when quartered shall be cut crosswise at almost right angles to the back bone so as to produce forequarters of all white meat and hindquarters of all dark meat and approximately equal size.

Nine-Piece Cut: The chicken shall be cut to yield two drumsticks and two wings. The remainder of the carcass shall be split by a crosswise cut at almost a right angle to the backbone so as to produce a front portion of all white meat and a rear portion of all dark meat (breast portion and thigh portion). The rear half of the chicken shall be split along the back into two approximately equal portions. The front half of the chicken shall be divided into three approximately equal portions, first by a crosswise cut at the front part of the breast starting in front of the point of the keel bone and proceeding at approximately a 45-degree angle to the backbone toward the posterior part of the breast, then by dividing the remainder of the front half with a lengthwise cut along the backbone and center portion of the breast.

The chicken parts may be frozen. If so, they should be frozen in a manner so as to reduce the internal temperature at the center of the package to 0° F. or below within 72 hours from time of entering the freezer. The frozen chicken parts shall be of a uniform bright and light color.

Chicken, Fresh or Frozen

Purchase Units:
Individually poly-bagged, 12 birds per box

Grade: U.S. Grade A

Class: Fowl (hen)

Style: Ready-to-Cook Whole

Weight of Carcass: 3 to 5 pounds

Recommended Points for Specifications:

Processing: When chickens are to be frozen, the chilled packaged chicken should be placed in the freezer within 30 hours from time of slaughter. The chicken should be frozen in a manner so as to bring

the internal temperature at the center of the package to 0° F or below within 72 hours from time of entering freezer. The frozen chicken shall be of a uniform bright and light color.

Chicken, Cut-up, Breaded, Fried

Purchase Units:
Pound: 30-pound containers

Form: Cooked, Frozen

Grade: U.S. Grade A.

Recommended Points for Specifications:
The batter/breading shall consist of a flour-type base with other ingredients as needed to produce a desirable texture, flavor, and color. Other ingredients shall include iodized salt added to a level not to exceed 9 percent by weight of the dry batter and breading combined. Monosodium glutamate may be used in accordance with Meat and Poultry Products Inspection Regulations (Part 381). Spices and flavorings (other than salt and monosodium glutamate) may not exceed 3 percent by weight of the dry batter and breading combined. Batter and breading used in a day's production shall not be held over and used the following day. The pickup of batter and breading prior to frying shall be approximately 14–16 percent of the weight of the chicken parts (based on the average pickup of the nine parts). Chicken should be processed (fried) in vegetable oil for at least 2 minutes at 325° F. The finished fried chicken should have an internal temperature of 185° F for dark meat and 180° F for light meat. After frying, the chicken should be immediately chilled and quick frozen to prevent the parts from sticking together after freezing. The finished product should be uniformly covered with batter and breading and have a uniform brown color. The product should be free from burnt areas.

Note: This specification was developed by USDA for processing USDA-donated frozen cut-up chicken into Fried Battered/Breaded Chicken.

Turkey, Fresh or Frozen

Purchase Units:
Pound
Young Hen Turkeys (not less than 12 pounds, giblets and necks included)
Young Tom Turkeys (16–24 pounds, giblets and necks included)

Grade: U.S. Grade A

Class: Young or Yearling Hen
Young or Yearling Tom

Style: Ready-to-Cook Whole, Halves (split), or Quartered

Weight of Carcass:
Young or Yearling Hen
12–14 pounds
14 pounds and above

Young or Yearling Tom
16–20 pounds
20–24 pounds
24 pounds and above

Recommended Points for Specifications:

Processing: Turkeys purchased fresh or frozen should be processed in their entirety in a plant operating under the Animal and Plant Health Inspection Service (APHIS), Meat and Poultry Inspection, and Poultry Grading Programs of AMS, USDA. Where turkeys are to be frozen, the chilled packaged turkeys should be placed in the freezer within 30 hours from time of slaughter. The turkeys should be frozen in a manner so as to bring the internal temperature at the center of the package to 0° F or below within 72 hours from the time of entering the freezer. The frozen turkeys shall be of a uniform bright and light color.

Frozen turkey parts such as breast and legs may also be purchased.

Turkey, Roast or Rolls

(Specifications based on USDA purchased Turkey Rolls donated to schools.)

Purchase Units: Raw Roll, 10 pounds, each 4½ to 5 inches in diameter.

Form: Raw, Ready-to-Cook or Cooked

Grade: Process from U.S. Grade II or better quality

Recommended Points for Specifications:

Processing: Turkey rolls purchased fresh or frozen should be processed in their entirety in a plant operating under USDA's Animal and Plant Health Inspection Service (Meat and Poultry Inspection) and Agricultural Marketing Service (Poultry Grading Programs).

Fabrication of Turkey Roll: Each roll shall be composed of natural proportions of light and dark turkey meat and skin from the turkeys used (skin not to exceed 15 percent of the total weight of meat and skin). Comminuted (mechanically deboned) meat may be substituted in part for the skin, but may not exceed 8 percent total. If the neck skin is included, the excess fat (blubber) and membranes shall be removed as well as discolorations and hair. Drumsticks may or may not be used. Furthermore, since the normal proportion of meat removed from a whole turkey is a minimum of 55 percent light meat and a maximum of 45 percent dark meat, the percentage of dark meat used can be increased to 45 percent by adding additional thigh meat to make up for the wing and drumstick meat not used. Any

trim meat used must be taken from the ready-to-cook whole carcasses which are used in the production of the rolls. If used, the drumsticks and wings may be deboned raw, or they may be cooked and the cooked meat deboned and mixed with the raw meat from the other parts. All tendons, cartilages, large blood vessels, blood clots, and discolorations should be trimmed from the meat.

One pound of iodized salt (free flowing iodized sodium chloride of foodgrade quality) shall be added to and mixed with 100 pounds of raw boned turkey meat or a combination of raw boned turkey meat and the cooked boned turkey meat from those parts permitted to be cooked as stated above.

The following amounts of ingredients and other substances shall be mixed and added to the turkey meat and salt. Emulsified skin (not to exceed 15 percent of the total weight of meat and skin); pepper — ½ ounce; sodium phosphates — 9¼ ounces; soy protein concentrate or isolated soy protein — 3 pounds; water — 2 pounds. The pepper shall be ground and be white or black. The phosphates are restricted to those listed in Part 381, Poultry Products Inspection Regulations.

The meat, ingredients, and emulsified products shall be mechanically mixed and pumped into a good commercial fibrous plastic-film bag or casing to yield a cooked roll between 4½ and 5 inches in diameter and weighing approximately 10 pounds. The bag or casing shall be sealed with a metal clip or other suitable sealing device.

The raw roll shall then be cooked in a water bath or by oven roasting in a steam or high humidity atmosphere to an internal temperature of not more than 173° F nor less than 168° F in thickest part of the product. The temperature of the water bath or oven shall not exceed 190° F. The moisture content of the finished cooked roll shall be in the range of 69 to 72 percent.

After cooking, the product shall be cooled as rapidly as practical, packaged, and placed in a freezer within 8 hours after processing and frozen to a temperature of 0° F within 72 hours after processing. The frozen product shall possess a light, bright frozen appearance and be practically free of weepage.

Poultry Food Products

A poultry products which bears the mark of Federal inspection has been checked against the recipe to be used, before the name ever goes on the label, to see that it tells what's really inside the package. Products labeled "poultry with gravy," for example, must contain at least 35 percent cooked poultry meat. So, knowing USDA's standards can help in menu planning, not to mention comparisons between products. The list below indicates products for which percentages of poultry have been established. This list *does not* include all products for which requirements have been set, nor does it necessarily include all requirements for those products that are listed.

All percentages of poultry-chicken, turkey, or other kinds of poultry—are on *cooked deboned basis* unless otherwise indicated. When the standard indicates poultry meat, skin, and fat, the skin and fat are in proportions normal to poultry.

Canned Boned Poultry:

Boned (kind), Solid Pack. At least 95 percent poultry meat, skin, and fat.

Boned (kind). At least 90 percent poultry meat, skin, and fat.

Boned (kind), With Broth. At least 80 percent poultry meat, skin, and fat.

Creamed Poultry. At least 20 percent meat. Product must contain some cream.

Poultry A La King. At least 20 percent poultry meat.

Poultry Barbeque. At least 40 percent poultry meat.

Poultry Chili. At least 28 percent poultry meat.

Poultry Chili With Beans. At least 17 percent poultry meat.

Poultry Croquettes. At least 25 percent poultry meat.

Poultry Hash. At least 30 percent poultry meat.

Poultry Noodles or Dumplings. At least 15 percent meat or 30 percent with bone.

Poultry Salad. At least 25 percent poultry meat with normal amounts of skin and fat.

Poultry with Gravy. At least 35 percent poultry meat.

General Information on Seafood

The number of varieties of seafood in the local markets varies considerably with the location and the season. Freezing methods and cold storage facilities make it possible to obtain seafood in frozen form the year-round, inland as well as in areas close to the source of supply. Frozen seafood retains most of the characteristics of fresh.

Sanitary inspection, which is a routine requirement in the processing of meat for interstate commerce, has been less extensively applied to seafood. The U.S. Department of Commerce's (USDC) voluntary fishery product inspection service permits qualified products to carry the USDC "packed under continuous inspection" or the USDC "grade mark" on the package. The experienced purchaser of fishery products knows that there are uninspected products that are of good quality. An important aid to wise selection of seafood is the choice of a sanitary market with known dependable standards. It is well, however, to examine carefully at the time of purchase seafood bought from even the most reliable market.

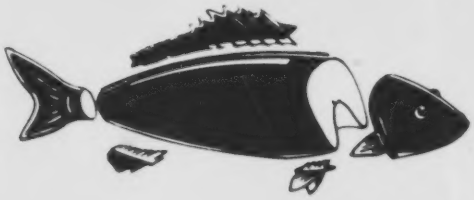
Style

Fresh and frozen fish may be purchased as whole or round, drawn, dressed steaks, single and butterfly fillets, and sticks. Cut frozen fish are commonly marketed in packages of 5, 10, 15, and 20 pounds; whole drawn fish are marketed by weight.

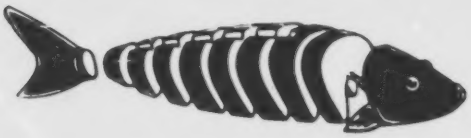
Fish deteriorates rapidly if it is improperly handled. Fresh fish should always be packed in ice for delivery and stored immediately at low temperature.

Frozen fish should be delivered still frozen and kept in that condition until time for cooking. If frozen fish has been allowed to thaw, it must be cooked immediately.

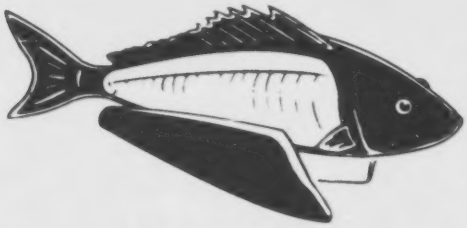
Market Forms of Fresh and Frozen Fish



Dressed or Pan-Dressed Fish are scaled and eviscerated usually with the head, tail, and fins removed. The smaller sizes are ready for cooking as purchased (pan-dressed). The larger sizes of dressed fish may be baked as purchased but frequently are cut into steaks or serving size portions.



Steaks are cross-section slices of the larger sizes of fish. They are ready to cook as purchased, except for dividing the very largest into serving-size portions. A cross-section of the backbone is usually the only bone in the steak.



Fillets are the sides of the fish, cut lengthwise away from the backbone. They are practically boneless and require no preparation for cooking. Sometimes the skin, with the scales removed, is left on the fillets; others are skinned.

Portions and sticks are machine-cut from large, solidly frozen blocks of fish fillets. The cut pieces are dipped in batter and coated with breading. Most fish sticks and some portions are then partially cooked, rapidly frozen, and packaged. Fish sticks and portions have proven popular. They are nutritious and appetizing, especially to children and teenagers. Moreover, these products are exceptionally good buys in terms of price per pound of edible food and take only a few minutes to prepare.

Canned Seafood

The many developments in the methods of preservation of fishery products have made a wide variety of canned seafood available on the market. These include canned salmon, tuna, mackerel, cod, herring, and sardines. Fish balls, chowders, and cakes made from these canned products can be used to add variety and zest to menus.

Federal Inspection

Inspection is voluntary and offered on a service-fee basis by the U.S. Department of Commerce. Federal Government inspectors check products for quality, quantity, condition, packaging, and other factors that affect product acceptability.

There are two major types of inspection service available and each has several advantages for the quantity food service buyer.

- *In-plant.* During in-plant inspection one or more inspectors are assigned to a processing plant at all times when it is operating. This service is made available only if a plant meets rigid sanitary requirements for facilities, equipment, and product. In-plant inspection assures the purchaser that the product was processed and packed under good sanitary conditions. Inspected products may bear either approved inspection marks or grade designation such as U.S. Grade "A" or "B," or both.
- *Lot.* Inspection may be requested on specific lots of fish or fish products. The lots may be of any size and may be located in places such as processing plants, warehouses, cold-storage plants, or terminal markets. Products are examined from a representative number of samples, depending on lot size, to determine grade, quality and condition, condition only, or compliance with other factors requested by the applicant. The results are reported on an official certificate. Lot inspection for condition only can be utilized prior to delivery to assure that previously inspected products are still in the original condition. Such certification is used to assure that

products have been properly handled in transit or cold storage. Seafood packed under Federal inspection may display an official mark or an official statement on the product label. The mark or

statement signifies that the properly labeled product is clean, safe, and wholesome, and has been produced in an acceptable establishment with appropriate equipment under the supervision of Federal inspectors. The product has not been graded as to a specific quality level; rather, it is an acceptable commercial quality as determined by Federal inspectors in accordance with approved standards for specifications.

Grading

Federally graded fish will bear the appropriate grade mark.

Grade A means top or best quality. All are uniform in size, practically free from blemishes and defects, in excellent condition and possess a good flavor and odor in the cooked state.

Grade B means good quality. Products may not be as uniform in size or as free from blemishes and defects as Grade A. This is a general commercial grade and is quite suitable for most purchases.

Quality grade standards are substantially above any minimum requirements for safety and edibility designed for consumer protection.

Many brand-name fishery products carry either one or both inspection marks on their labels. The following is a partial list of fish or shellfish products made from a variety of species of fish, which presently bear inspection marks.

- Frozen Raw Fish Fillets, Portions and Sticks
- Frozen Fried Fish Fillets, Portions and Sticks
- Frozen Raw Breaded Shrimp
- Fried Fish Seafood Cakes
- Frozen Fish Steaks

To obtain a copy of the current "Approved List" of all firms under USDC inspection and the products they produce, write to the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, National Fishery Product Inspection and Safety Laboratory, P.O. Drawer 1207, Pascagoula, Mississippi 39567.

Fish Fillets

Purchase Units:
Package should weigh not over 10 pounds. Cello wrapped and packaged in 5- or 10-pound boxes.

Form: Frozen

Grade: Packed Under Federal Inspection (PUFI) or Lot Inspected.

Recommended Points for Specifications:

Material: Fish fillets are generally made of ocean-perch, ocean catfish, cod, flounder, pollock, haddock, or Greenland turbot. The product consists of clean, whole, wholesome fillets, cut lengthwise away from the backbone, packaged and frozen in accordance with good commercial practice, and maintained at temperatures necessary for the preservation of the product.

Grades are determined by examining the product in the frozen, thawed, and cooked states. The following factors of quality are evaluated in determining the grade of the product: flavor and odor, appearance, size, absence of defects, and character.

Watch For: Packages with "drip" or ice on the packages which indicate fish may have thawed and been refrozen.

Fish Portions, Fried Breaded

Purchase Units:
2-, 2 1/2-, or 3-ounce portions, packaged in 5- or 6-pound boxes.

Form: Frozen

Grade: Packed Under Federal Inspection (PUFI) or U.S. Grade A
Portions are machine-cut from large solidly-frozen blocks of fish fillets. Pieces are dipped in batter, coated with breading, partially cooked, rapidly frozen, and packaged.

Recommended Points for Specifications:

Material: Fish portions are generally made of cod, haddock, whiting, or pollock. All portions in an individual package are prepared from the flesh of one species of fish. Fish portions range in weight from 1 1/2 to 5 ounces and are least three-eighths of an inch thick and contain not less than 65 percent, by weight, of fish flesh.

Specify: Fish portions that are graded and inspected.

Watch For: Packages with "drip" or ice on the packages which indicate that fish may have thawed and been refrozen.

Fish Portions, Raw Breaded

Purchase Units:
2-, 2¼-, or 3-ounce portions, packaged in 5- or 6-pound boxes.

Form: Frozen

Grade: Packed Under Federal Inspection (PUFI) or U.S. Grade A

Portions are machine-cut from large, solidly-frozen blocks of fish fillets. Pieces are dipped in batter and coated with breading and rapidly frozen and packaged.

Recommended Points for Specifications:

Material: Fish portions are generally made of cod, haddock, sole, flounder, whiting, or pollock. All portions in an individual package are prepared from the flesh of one species of fish. Fish portions range in weight from 1½ to 5 ounces and are at least three-eighths of an inch thick and contain not less than 75 percent, by weight, of fish flesh.

Specify: Fish portions that are graded and inspected.

Watch For: Packages with "drip" or ice on package indicating that fish may have thawed and been refrozen.

Fish Sticks, Fried Breaded

Purchase Units: 5- or 6-pound boxes

Form: Frozen

Grade: Packed Under Federal Inspection (PUFI) or U.S. Grade A

Fish sticks are machine-cut from large solidly-frozen blocks of fish fillets. The cut pieces are dipped in batter and coated with breading, then partially cooked, rapidly frozen and packaged.

Recommended Points for Specifications:

Material: Fish sticks are generally made of cod, haddock, whiting, or pollock. All fish sticks in an individual package are prepared from the flesh of one species of fish. Fish sticks are 3 to 4 inches long and weight up to 1½ ounces. They are at least three-eighths of an inch thick and contain at least 60 percent fish. Pollock and minced cod are also available.

Specify: For school food service, 1-ounce fish sticks that are graded and inspected.

Watch For: Packages with "drip" or ice on the packages indicating that fish may have thawed and been refrozen.

Fish Sticks, Raw Breaded

Purchase Units: 5- or 6-pound boxes

Form: Frozen

Grade: Packed Under Federal Inspection (PUFI) or U.S. Grade A

Fish sticks, raw breaded, are machine-cut from large, solid frozen blocks of fish fillets dipped in batter and coated with breading. They are then rapidly frozen and packaged.

Recommended Points for Specifications:

Material: Fish sticks are generally made of cod, haddock, whiting, or pollock. All fish sticks in an individual package are prepared from the flesh of one species of fish. Fish sticks are 3 to 4 inches long and weigh up to 1½ ounces. They are at least three-eighths of an inch thick and contain at least 60 percent fish.

Specify: For school food service, 1-ounce fish sticks that are graded and inspected.

Watch For: Packages with "drip" or ice on the packages indicating that fish may have thawed and been refrozen.

Salmon

Purchase Units: 64-ounce cans, 6 cans per case

Form: Canned

Grade: Packed Under Federal Inspection (PUFI)

Recommended Points for Specifications:

Material: Salmon are of five distinct species and are usually sold by their names, since they indicate the differences in type of meat. The differences are a matter of color, texture, and flavor. The higher priced varieties are deeper red in color, have a firmer texture, more pleasing flavor, and a higher oil content. In descending order according to price, the grades of salmon are red or sockeye salmon; Chinook or king salmon; medium red, coho, or silver salmon; pink salmon; and chum or keta salmon.

When Purchasing Canned Salmon: Determine the best quality at the least cost and the grade of salmon best suited to the recipe used.

Remember: The less expensive salmon is as nutritious as the more expensive type and can be used in a variety of recipes.

Seafood Cakes, Fried Breaded

Purchase Units:
2-, 2½-, or 3-ounce portions, packaged in 3-, 4-, or 5-pound boxes.
3 ounce portions, 4½ pound box
2 ounce portions, 3 or 4 pound box

Form: Frozen

Grade: Pack under Federal Inspection (PUFI) or Lot Inspected

Seafood cakes are prepared from broken pieces of fish, fresh or frozen, or salt cod, which has been cooked and flaked or ground before mixing with a potato-egg mix. Special seasonings are added and the fish cakes are formed into 2-, 2½-, or 3-ounce portions, breaded, fried, rapidly frozen, and packaged.

Recommended Points for Specifications:

Material: Seafood cakes are generally made of cod, haddock, whiting, or pollock and may consist of a combination but will be labeled as to the species used. Seafood cakes contain approximately 40 to 60 percent fish.

Specify: Seafood cakes that are inspected.

Watch For: Packages with "drip" or ice on the package, indicating that the contents may have thawed and been refrozen. Containers that are not intact.

Tuna

Purchase Units:
60- to 66½-ounce cans, 6 cans per case

Form: Canned

Style: Fancy or solid. The cans usually contain large pieces of chucks or firm flesh.

Chunk. The tuna is packed in smaller pieces of firm flesh.

Flaked or grated. The tuna is flaked and loosely packed.

Grade: Packed Under Federal Inspection (PUFI)

Recommended Points for Specification:

Materials: Several species of fish are marketed as tuna including: Albacore, bluefin, yellowfin, skipjack and little tuna. Albacore has lighter meat than the other species and is the only tuna permitted to be labeled as "white meat." The other species are labeled as "light meat" tuna. Tuna is packed in either oil or water.

When Purchasing Canned Tuna: Determine the best quality for the least cost and use the style of pack best suited to the recipe used.

Beans, Dry

Blackeye Peas
Great Northern
Kidney
Lima
Navy
Pinto
Small White

Purchase Units: Pound: 2-, 25-, 100-pound bags

Grades: Buy the following grades for the specific dry beans:

Blackeye Peas—U.S. Grade #1.

Great Northern, Pinto, Pea Beans, Kidney—U.S. Grade Choice, handpicked.

Limas, large or small—U.S. Grade Extra #1.

Grades for beans are generally based on the following factors: shape, size, color, damage, and foreign material. The more uniform the color and size of the product, the higher the grade. Beans in the lower grades contain more foreign matter, more kernels of uneven size, and off-color.

Beans should have a bright, uniform color. Loss of color indicates long storage and lack of freshness and a product that will take longer to cook.

Watch For: Beans of uniform size, without cracked seed coats, foreign material, and pinholes caused by insect damage.

Peas and Lentils, Dry

Whole Peas
Split Peas
Lentils

Purchase Units: Pound: 1-, 25-pound bags

Grade: U.S. Grade #1.

Grades for peas and lentils are generally based on the following factors: shape, size, color, damage and foreign material. The more uniform the color and size of the product the higher the grade. Peas and lentils in the lower grades contain more foreign matter, more kernels of uneven size, and off-color.

Peas and lentils should have a bright uniform color. Loss of color indicates long storage and lack of freshness and a product that will take longer to cook.

Watch For: Peas and lentils of uniform size, without cracked seed coats, foreign material, and pinholes caused by insect damage.

Peanut Butter

Purchase Units: No. 10 cans, 6 cans per case

Type: Smooth or Chunky

Grade: U.S. Grade A

Peanut butter is prepared by grinding shelled and roasted, blanched peanuts. Suitable seasoning and stabilizing ingredients may be added not in excess of 10 percent of the weight of the finished product. To the ground peanuts, cut or chopped, shelled and roasted peanuts may be added.

Peanut butter should have color that is medium brown to brown color roast. Peanut butter should be firm set, smooth, pliable, and have good spreadability.

Enriched Macaroni Products With Fortified Protein

Purchase Units: Pound

To be credited as a meat alternate in Child Nutrition Programs, Enriched Macaroni Products with Fortified Protein must:

1. Meet specifications defined by USDA in the Federal Register, March 27, 1974.

2. Be used to meet not more than one-half the meat/meat alternate requirement when served in combination with 1 or more ounces of cooked meat, poultry, fish or cheese.

3. Be labeled as follows, "One ounce dry weight of this product meets one-half of the meat or meat alternate requirements of lunch or supper of the USDA Child Nutrition Programs when served in combination with 1 or more ounces of cooked meat, poultry, fish or cheese."

Recommended Points for Specifications:
The product has been accepted by FNS/USDA for use in Child Nutrition Programs.

The product should conform to Food and Drug Standards of Identity for Enriched Macaroni Products with Fortified Protein. To be accepted by FNS, Enriched Macaroni Products with Fortified Protein must conform to Standards of Identity as defined by the Food and Drug Administration.

The product should be labeled as required by FNS/USDA and FDA/DHEW.

Note: A listing of acceptable enriched macaroni products with fortified protein is available through the State Agencies or FNS Regional Offices.

Federal Standards of Identity: Code of Federal Regulations, Food and Drugs, 21, Part: 16.15.

Textured Vegetable Protein Products

Purchase Units: Pound

To be credited as a meat alternate in Child Nutrition Programs Textured Vegetable Protein Products must:

1. Meet specifications defined by USDA in FNS Notice 219, February 22, 1971.

2. Be served in combination with meat, poultry or fish, such as ground meat in menu items like meat patties, meat loves, meat sauce, chili, lasagna, pizza, or similar products. The ratio of the hydrated Textured Vegetable Protein Product to uncooked meat, poultry, or fish in the combination shall not exceed 30 parts per 70 parts, respectively, on basis of weight.

3. Have a moisture content of 60–65 percent when hydrated.

4. Must be labeled as follows, "This is to certify that this product meets USDA/FNS specifications for Textured Vegetable Protein Products."

Forms: Dry or frozen (hydrated)

Color: Colored or uncolored

Flavor: Flavored or unflavored

Recommended Points for Specifications:
The product has been accepted by FNS/USDA for use in Child Nutrition Programs.

The product should be labeled as required by FNS/USDA.

Specify the desired form, color, and flavor.

Note: A listing of acceptable textured vegetable protein products is available through the State Agencies or FNS Regional Offices.

General Information on Fresh Vegetables and Fruits

The food service director or person responsible for purchasing must study the market for fresh produce by reading produce reports in newspapers, listening to market news reports on radio and television, and keeping in touch with vendors. It is important to have a knowledge of prices, supply and demand, the seasonability of vegetables and fruits, and the areas where they are grown. The chart on page 72 indicates the monthly availability of fresh vegetables and fruits.

Locally grown commodities are seldom graded for quality. The greater the distance of the market from the producing area, the more likely the product is to be graded. If graded, the quality refers to the product at the time of packing. It is necessary to specify that items meet the grade or special requirements at the time of delivery.

Choice should depend on the use that is to be made of the product, not on price alone. Price must be balanced against such factors as freshness, tenderness, shape, size, trim loss, and total waste.

If possible, selection of fresh produce should be made in person. In examining vegetables and fruits, the buyer should not handle them unnecessarily or in such a way that injury to the produce will result. He should purchase freshly picked items and should use them while they are fresh to prevent vitamin loss. Additionally:

- Distinguish between blemishes that affect only appearance and those that affect eating quality.
- Check on maturity of items.
- Avoid vegetables and fruits that are overripe or that show decay.
- Be conscious of size and count. Use off-sizes when possible. They may be better buys.
- Know sizes of containers and check on their contents. Watch for loose or short packs or packs with one quality on top and another on the bottom.

USDA maintains inspection services at principal shipping points and terminal markets. Grade standards have been developed for use in wholesale and retail trading, but because of the high perishability of produce it is difficult to rely on grades alone.

USDA Wholesale Grades

Grade standards are necessarily broad. Fruits and vegetables differ widely in quality according to type and growing conditions. Federal standards must have broad tolerances to encompass all the variations. A set of fruit and vegetable grade standards is available from the Fruit and Vegetable Division, AMS, U.S. Department of Agriculture, Washington, D.C. 20250. The grades and standards are as follows:

- U.S. Fancy. This grade applies to highly specialized produce, a very small percentage of the total crop. This grade is rarely used on most commodities because it it too costly to pack.
- U.S. No. 1. This grade is the most widely used grade in trading produce from farm to market and indicates good average quality.
- U.S. Commercial. This grade applies to produce inferior to U.S. No. 1 but superior to U.S. No. 2.
- U.S. Combination. This grade applies to produce that combines percentages of U.S. No. 1 and U.S. 2
- U.S. No. 2. This grade applies to what is usually considered the lowest quality practical to ship. Produce of this grade usually has much poorer appearance and more waste than U.S. No. 1.
- U.S. No. 3. This grade applies to produce used for highly specialized products.

It is the purchaser's responsibility to specify that the item must meet grade standard when delivered. When ordering fresh produce, the buyer should specify in addition to grade, the size, count, container, and ripeness wanted. These factors can make a difference in wholesale prices. The buyer should also check net weight.

Monthly Availability of Fresh Vegetables and Fruits

Commodity	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Apples	—	—	—	—	—				—	—	—	—
Apricots						▬	▬					
Asparagus			—	▬	▬	—						
Avocados	—	—	—	—	—	—	—	—	—	—	—	—
Bananas	—	—	—	—	—	—	—	—	—	—	—	—
Beans, Green or Wax	—		—	—	—	—	—	—	—	—	—	—
Beets					—	—	—	—	—	—	—	
Berries, Misc.[1]						▬	▬	—				
Blueberries						▬	▬	▬				
Broccoli	—	—	—	—	—				—	—	—	—
Brussels Sprouts	—	—	—						—	—	—	—
Cabbage	—	—	—	—	—	—	—	—	—	—	—	—
Cantaloup					—	—	—	▬	—			
Carrots	—	—	—	—	—	—	—	—	—	—	—	—
Cauliflower	—	—	—	—					—	—	—	—
Celery	—	—	—	—	—	—	—	—	—	—	—	—
Cherries					—	▬	▬	—				
Chinese Cabbage	—	—	—	—	—	—	—	—	—	—	—	—
Corn				—	—	—	—	—	—			
Cranberries									—	—	▬	—
Cucumber				—	—	—	—	—	—	—	—	—
Eggplant	—	—	—	—	—	—	—	—	—	—	—	—
Escarole-Endive-Chicory	—	—	—	—	—	—	—	—	—	—	—	—
Grapefruit	—	—	—	—	—					—	—	—
Grapes							—	—	—	—	—	—
Greens	—	—	—	—	—	—	—	—	—	—	—	—
Honeydew Melon		—	—	—		—	—	—	—	—		
Lemons	—	—	—	—	—	—	—	—	—	—	—	—
Lettuce, head, leaf, Romaine	—	—	—	—	—	—	—	—	—	—	—	—
Limes					—	—	—	—	—	—	—	—
Mangoes				—	—	▬	▬	—				
Mushrooms	—	—	—	—	—	—	—		—	—	—	—
Nectarines						—	▬	▬	—			
Okra						—	—	—	—	—		
Onions, green	—	—	—	—	—	—	—	—	—	—	—	—
Onions, mature	—	—	—	—	—	—	—	—	—	—	—	—
Oranges	—	—	—	—	—	—					—	—
Parsley & Herbs	—	—	—	—	—	—	—	—	—	—	—	—
Parsnips	—	—	—	—	—				—	—	—	—
Peaches						▬	▬	▬	—			
Pears	—	—	—	—				—	—	—	—	—
Peas, green	—	—	—	—	—	—	—	—				
Peppers, green	—	—	—	—	—	—	—	—	—	—	—	—
Pineapples	—	—	—	—	—	—	—				—	—
Plums						—	▬	▬	—			
Potatoes, white	—	—	—	—	—	—	—	—	—	—	—	—
Pumpkins										▬		
Radishes	—	—	—	—	—	—	—	—	—	—	—	—
Rhubarb	—	—	—	—	▬	—						
Spinach	—	—	—	—	—	—	—		—	—	—	—
Squash, summer, winter	—	—	—	—	—	—	—	—	—	—	—	—
Strawberries			—	—	▬	▬	—					
Sweetpotatoes	—	—	—	—				—	—	—	—	—
Tangerines	—	—									—	▬
Tomatoes	—	—	—	—	—	—	—	—	—	—	—	—
Turnips-Rutabagas	—	—	—	—					—	—	—	—
Watermelons					—	▬	▬	▬	—			

[1] Berries, miscellaneous refers to mostly blackberries, dewberries, raspberries.

— 6–23% of the total annual supply
▬ 24–42% of the total annual supply
▬ over 43% of the total annual supply

Asparagus

Purchase Units:

Cartons	15–16 pounds
Pyramid Crates	30–32 pounds

Select firm, crisp, smooth, and clean spears with compact tips and good green color extending down near the base. Spears which are ridged, crooked, or have spread tips or excessive amounts of white at base are likely to be tough.

Watch For: Wilted, flabby spears or mushy condition of tips which indicate age and have objectionable flavor.

Avocados

Purchase Units:

Cartons and Flats	12–15 pounds

Select avocados having a fresh, bright appearance, heavy, medium-size, fairly firm or just beginning to soften. Irregular light brown markings on the skin have no effect on the flesh.

Watch For: Dark, sunken spots may merge and form irregular patches. If the surface is deeply cracked or broken, this is an indication of decay.

Beans, Green or Wax

Purchase Units:

Baskets	bushel 1/2 bushel	28–30 pounds 14–15 pounds
Crates	bushel	28–30 pounds
Cartons		28–30 pounds

Select young, tender, well-formed beans which are free from blemishes and are fresh and crisp. Look for bright color in either green or yellow podded varieties. Beans should snap or break in two pieces before bending double.

Watch For: Wilted and dry beans which are signs of aging after picking, resulting in poor flavor. Older beans with enlarged seeds which are likely to be tough and fibrous.

Broccoli

Purchase Units:

Crates	4/5 bushel	15–20 pounds	
Crates, Wirebound		20 pounds	
Baskets	8 quarts	6 pounds	
Cartons		20–23 pounds	14 bunches

Select bunches having a deep green color, compact, firm surface with small individual buds, and fresh appearance.

Watch For: Soft, slippery, watersoaked spots or irregular brown spots which are signs of decay. Heads which are spreading, wilted, turning yellow or have many enlarged flower buds are old and probably will have an off-flavor.

Brussels Sprouts

Purchase Units:

Wooden Drums		25 pounds
Flats	12 10-ounce cups	7 1/2 to 8 ounces per cup
Cartons		25 pounds

Select sprouts having fresh, bright green color, tight fitting and firm outer leaves.

Watch For: Sprouts with yellow or otherwise discolored leaves or sprouts which are soft, open or wilted. Small holes or ragged leaves may indicate worm damage.

Cabbage

Purchase Units:

Crates	1 3/5 bushels	50–55 pounds
Cartons		45–50 pounds
Mesh Sacks		50–60 pounds

Select well-trimmed heads having green, fresh outer leaves and heads which are firm and heavy for their size, free from signs of insects and bad blemishes. Stock out of storage is usually lacking in green color, but may be otherwise satisfactory.

Watch For: Faded green and yellowing or wilted outer leaves which are objectionable. Worm and insect injury may penetrate the head and require excessive trimming. Heads with decay should be avoided.

Carrots Without Tops

Purchase Units:

Sacks		50 pounds
Crates		50 pounds
Baskets	bushel	50 pounds

Select medium to small size roots which are well-shaped, smooth, solid, and have good orange color. Carrots with considerable green color at the top require extra trimming.

Watch For: Sunken or mushy spots, mold or flabbiness which are indications of age and poor condition.

Cauliflower

Purchase Units:

Cartons	18–24 pounds	12–16 heads
Crates, Wirebound	45–50 pounds	

Select closely trimmed heads which are white to creamy white, compact, solid, and have clean curds. Jacket leaves, if present, should be fresh and green.

Watch For: Spotted or spreading heads which are a sign of aging, over maturity, or disease.

Celery

Purchase Units:

Crates, Florida	16 inch length	55–60 pounds
Crates, California	16 inch length	60–65 pounds

Select bunches which have bright, medium to light green color; fresh, firm, crisp branches which are free from noticeable blemishes or decay.

Watch For: Stalks with wilted, flabby branches, predominantly yellow leaves, dark streaks inside the branches or coarse central stems. Avoid celery with brown to black discoloration of the small center branches or insect injury.

Corn

Purchase Units:

Crates, Wirebound	40–60 pounds	4 dozen ears
Mesh Bags	45–50 pounds	

Select ears having fresh, succulent husks with good green color. Kernels should be plump, but, when ruptured, should squirt a thin milk-like liquid, not thick and starchy.

Watch For: Undeveloped ears, and kernels which are depressed and deep yellow. Also avoid ears with yellowed, wilted, or dried husks.

Cucumbers

Purchase Units:

Crates	$1\frac{1}{9}$ bushel	55 pounds
Baskets	bushel	47–55 pounds
Cartons		26–30 pounds
Lugs		25–30 pounds

Select cucumbers having well-rounded ends, mostly deep green color, and very firm and free from noticeable defects. White surface areas on otherwise well-colored cucumbers do not affect the eating quality.

Watch For: Cucumbers having a thick cross section and with faded or yellowing color. These are probably overmature. Avoid wilted, spongy, shriveled, or decayed cucumbers.

Greens, Salad

Chicory
Endive
Escarole

Purchase Units:

Crates	$1\frac{1}{9}$ bushel	25–28 pounds
	$1\frac{2}{5}$ bushel	33–40 pounds
	16-inch crate	33–40 pounds
Cartons		18–22 pounds
Baskets	24 quarts	16 pounds
	bushel	25 pounds

Select greens having green outer leaves which are crisp, tender and practically free from discolored spots, insect damage, or decay. Chicory normally has blanched (whitish-yellow) leaves in the centers of larger plants, which is a desirable condition.

Watch For: Materially wilted or yellowed plants which are unsatisfactory.

Greens

Collards
Kale

Purchase Units:

Baskets	bushel	18–25 pounds
Crates		18–22 pounds

Select dark or bluish-green plants with fresh, young tender leaves free from insects and blemishes.

Watch For: Extremely tough, fibrous leaf stems or decayed, yellowed or badly wilted leaves which indicate over-age and poor eating quality.

Greens

Spinach
Turnip
Mustard

Purchase Units:

Baskets	bushel	18–22 pounds
Crates		18–22 pounds
	1½ bushel	30–32 pounds
Cartons	1⅛ bushel	20–22 pounds

Selected green-colored leaves which are tender, fresh, crisp, and free from insects, blemishes, and decay and are not noticeably dirty.

Watch For: Coarse, tough leaf stems, yellowish color, excessively bruised leaves, or soft decay, which are all signs of poor eating quality.

Lettuce

Head

Purchase Units:

Cartons	40–45 pounds	2 dozen heads

Select heads having a green color which are at least fairly firm, with fresh outer leaves free from insects and noticeable discoloration or decay.

Watch For: Very firm heads showing tan or brownish discoloration of leaf stems at the base of the head which are likely to be of poor quality. Tip burn, a tan or brown discoloration along the outer margin of the head leaves, often extends to many leaves inside the head and is objectionable.

Lettuce

Romaine

Purchase Units:

Crates, Wirebound	1⅛ bushel	28–32 pounds	
Cartons		34–36 pounds	2 dozen heads

Select plants which have a rich green color. Leaves should have a good bright medium to light green color and be clean and crisp. Leaves should be free from insect injury, other blemishes, or decay.

Watch For: Heads which lack green color. Heads with irregular shapes, which indicates the presence of overgrown central stems. Tip burn, a tan or brown area around the margins of the leaves. Serious discoloration or soft decay which should be avoided.

Lettuce

Leaf

Purchase Units:

Baskets	12 quarts	7 pounds
Other containers		5–10 pounds 20–25 pounds

Select leaves having a light green color (except reddish tinted varieties) and which are fresh, succulent, tender, and free from insect injury or discolored spots or decay.

Watch For: Lots which are noticeably wilted or showing numerous discolored leaves or spots of soft decay which will cause too much waste.

Okra

Purchase Units:

Baskets	bushel	28–32 pounds
	½ bushel	14–16 pounds
Crates	bushel	28–32 pounds
L.A. Lugs		17–19 pounds

Select young, tender pods with medium to light green color. Best quality pods are usually between 2 and 4½ inches long with tips that bend very easily and pods that yield to slight pressure.

Watch For: Pods that are long, very pale in color, very firm or dry in appearance which are likely to be tough and fibrous.

Onions, Mature

Purchase Units:

Mesh Sacks	25 or 50 pounds
Cartons	48–50 pounds

Select well-shaped, hard, dry onions which are free from greening, other blemishes, sprouts or decay. Softness and moistness in the necks are evidence of decay or lack of full maturity. Fresh sprouts sap the strength and cause deterioration. Excessive greening or "sun-burn" may affect flavor.

Watch For: Onions with thick, hollow, woody, seed items and with fresh sprouts which indicate poor quality.

Parsley

Purchase Units:

Crates, Wirebound	20–22 pounds	
Cartons	20–22 pounds	5 dozen bunches

Select bunches that are fresh and crisp and having a bright green color.

Watch For: Watersoaked, discolored, or slimy leaves affected by decay which indicate poor quality.

Peas, Green (pods)

Purchase Units:

Baskets	bushel	28–30 pounds
Crates, Western		28–30 pounds

Select green pods which are well-filled out but not excessively bulgy.

Watch For: Pods which are whitish-green or turning yellow or are badly wilted or warm are likely to have peas which are hard, starchy, and of poor flavor.

Peppers

Purchase Units:

Crates	1 1/9 bushels	28–33 pounds
Baskets	bushel	28–33 pounds
Cartons	1 1/9 bushels	28–34 pounds
Lugs		18 pounds

Select well-formed, firm, glossy, rich green or red color peppers free from blemishes or decay.

Watch For: Pale green, dull color, or lack of firmness indicating poor quality. Soft, mushy spots of decay progress rapidly and cause excessive waste. Green to black slimy decay around stems may often be overlooked, but this decay will also progress rapidly.

Potatoes, White

Purchase Units:

Burlap Sacks	50 or 100 pounds
Paper Cartons or Paper Bags	10, 15, 20, 25 or 50 pounds

Select well-shaped, smooth, reasonably clean, firm potatoes free from cuts, bruises, green skins, other blemishes and decay. Decidely green areas may cause bitter flavor. Deep penetrating bruises or small worm holes cause excessive waste.

Watch For: Badly sprouted or soft, flabby potatoes which are unsatisfactory. Potatoes which are soft due to freezing are unsatisfactory.

Radishes Without Tops

Purchase Units:

Baskets	11 1/4 pounds
Cartons	11 1/4 pounds
Bags	25 or 40 pounds

Select medium size (3/4 to 1 1/8 inches) well-shaped, very firm radishes with bright red color. Very large roots or those which are not firm are likely to be pithy inside.

Watch For: Radishes with cuts or gouges which often discolor and decay rapidly.

Squash
Summer

Purchase Units:

Baskets	bushel 1/2 bushel	40–45 pounds 20–22 pounds
Crates	1 1/9 bushels 5/9 bushel	42–45 pounds 22–25 pounds
Cartons		20–25 pounds
Lugs		24 pounds

Select young, tender, firm, bright and glossy squash of good color for the variety. For tenderness select pale yellow color in yellow varieties of squash, greenish white in Patty Pan, and deep green in the Zucchini or Marrow types.

Watch For: Those with dull surface and tough rind which are over-grown or over-age and are likely to have poor texture and flavor.

Squash
Winter

Purchase Units:

Baskets	bushel	50 pounds
Crates		40–50 pounds
Cartons		20–25 pounds

Select medium to large squash having heavy, hard, and tough rinds. These are usually fully mature and of best quality. Cuts and punctures on the surface are likely to lead to internal decay.

Watch For: Watersoaked or moldy spots which indicate freezing injury or early stages of decay.

Sweetpotatoes

Purchase Units:

Baskets	bushel	50 pounds
Crates	bushel	50 pounds
Cartons		38–42 pounds

Select smooth, well-shaped, firm potatoes which are free from worm or grub injury, cuts, bruises, and decay. Those having withered or soft ends or sunken, discolored areas on the sides are likely to be affected by decay which may cause heavy waste and affect the flavor of the remaining portion of the potato.

Watch For: Worm holes and other penetrating defects which cause excessive waste.

Tomatoes

Purchase Units:

Cartons	10, 20, 30, or 40 pounds
Crates	40 pounds
Lugs	30–34 pounds
Flats	10–20 pounds
Baskets (various)	9–20 pounds

Select well-shaped, smooth, firm tomatoes which are free from cracks, green or yellow sunburned areas, other blemishes and decay. Full red color and slight softening are best for immediate use. Pink to light red and firmer flesh are preferred for use over a several day period. Spots of decay usually enlarge rapidly and cause very heavy loss.

Watch For: Soft, bruised tomatoes with deep, long cracks. This requires much trimming and excessive waste.

Turnips Without Tops

Purchase Units:

Baskets	bushel	50 pounds
Sacks		50 pounds
Cartons		40–50 pounds

Select turnips that have white flesh and purple tops that are small or medium sized, smooth, fairly round and firm, with leaf scars around the crown.

Watch For: Large turnips with too many leaf scars around crown and with obvious fibrous roots, deep cuts, or decay.

Apples

Purchase Units:

Cartons, Tray-pack	1 or 1 1/8 bushel	36–45 pounds	113–138 count (medium)
Cartons, Cell-pack	1 or 1 1/8 bushel	36–45 pounds	100–140 count (medium)
Cartons, Bulk (various)		20–46 pounds	50–140 count (medium)
Cartons, Boxes	bushel	36–44 pounds	113–138 count (medium)
Cartons, Baskets	bushel	36–44 pounds	110–140 count (medium)

Select firm, crisp, well-colored apples. Flavor varies in apples and depends on the stage of maturity at time of picking. Immature apples lack color and are usually poor in flavor.

Varieties

Eating out of Hand: McIntosh, Red Delicious, Stayman, Golden Delicious, Jonathan

Cooking, Salads: Grimes, Winesap, Greening, Jonathan, Gravenstein, Stayman, Pippin, Red Delicious, Cortland

Baking: Rome, Winesap, Greening, Stayman, York

Watch For: Overripe apples (indicated by a yielding to slight pressure on the skin and soft, mealy flesh). Apples with bruised areas and decay. Scald on apples (irregular shaped tan or brown areas) which may not seriously affect the eating quality of the apple.

Apricots

Purchase Units:

Lugs		25–30 pounds
Cartons		12–25 pounds
Cartons or Crates	4 baskets	20–26 pounds

Select apricots having a bright, plump and juicy appearance with a uniform golden-orange color. Ripe apricots will yield to gentle pressure. Dull-looking, soft fruit will be overripe and tasteless. Very firm, pale yellow or greenish-yellow fruit may be immature and may never ripen.

Watch For: Badly bruised and decayed fruit.

Bananas

Purchase Units:

Cartons	40 pounds	110–125 count 175–200 count (petite)

Select plump, firm, bright colored fruit, mostly free from scars and bruises.

For immediate use: Choose solid yellow color fruit which is lightly flecked with brown.
For later use or cooking: Choose those mostly yellow with green tips.

Watch For: Bruised fruit; discolored skins; decay; a dull, grayish, aged appearance (showing that the bananas have been exposed to cold and will not ripen properly).

Berries

Blackberries
Blueberries

Purchase Units:

Trays	12 pints	9–15 pounds

Select plump, deeply colored, fresh, bright-looking berries; firm, dry, and free from mold. Poorly colored berries are usually tough and sour.

Watch For: Dull appearance, softness, and mold which are signs of age and waste.

Cantaloup

Purchase Units:

Crates	80–85 pounds	27, 36, 45 count
Cartons	38–41 pounds	12, 18, 23 count

Select melons that are well-formed with much of the surface covered with prominent netting (raised, corky ridges in net-like pattern). Stem should be missing, leaving a shallow, smooth, healed depression, indicating a mature melon. Color between netting should be grayish to yellowish green. Shallow cracks around the stem scar are not objectionable on a good ripe melon.

Watch For: Melons with torn stems or jagged stem scars and very green color which are probably immature and not likely to ripen. Those which are very soft or have deep cracks in the rind are overripe.

Cherries, Sweet

Purchase Units:

Lugs or Cartons		12, 14, 15, 18, or 20 pounds
Crates	8 quarts	12 pounds

Select deeply colored, glossy, fairly firm fruits which are dry and generally free from pitted areas and decay. Medium to light red cherries are not fully ripe and do not have the best flavor.

Watch For: Dull-appearing, soft, or shriveled fruits with brown stems which are usually overripe and of poor flavor or inedible.

Cranberries

Purchase Units:

Cartons	24 packs	24 pounds (1-pound packs)

Select berries with a fresh, bright, plump appearance, firm with lustrous, partly red to full red color.

Watch For: Soft, spongy or leaky berries which may produce an off-flavor when cooked.

Grapefruit

Purchase Units:

Cartons, Texas	7/10 bushel	40 pounds
Cartons, Florida	4/5 bushel	42 pounds
Cartons, Western	half-box	34–36 pounds

Select smooth, thin-skinned, well-shaped, heavy-for-the-size, firm fruit, free from decay. Skin defects such as russeting, scars, etc. usually do not affect the eating quality.

Watch For: Rough, ridged, or wrinkled skin or pointed shape which may indicate thick skin, pulpiness, and lack of juice.

Grapes

Purchase Units:

Lugs or Cartons	17–28 pounds

Select plump, firm, well-colored, fresh looking berries firmly attached to stems. White or green grapes are sweetest when the color is yellowish or straw color with a tinge of amber. Red varieties are better when a good red color predominates on all or most of the berries. Stems should be predominately green or pliable.

Watch For: Soft or wrinkled berries, grapes with bleached areas around the stem end, leaking and decayed berries.

Lemons

Purchase Units:

Cartons	37–39 pounds	140–165 count (medium)

Select fruit having a rich yellow color, reasonably smooth textured skin with a slight gloss, and firm and heavy for the size. A pale or greenish-yellow color indicates slightly higher acidity. Coarse skin texture indicates thick skin with less flesh and juice.

Watch For: Fruit that is shriveled, hard-skinned, or soft or spongy, or with brown discolored sunken areas which are indications of aging and deterioration.

Limes

Purchase Units:

Flats or Cartons	10–11 pounds	25–35 count (medium)
Boxes or Cartons	40–41 pounds	

Select fruit having a bright glossy skin, and heavy for the size. Purplish or brownish mottling of the skin (scald) does not damage the flesh when in early stages.

Watch For: Dull, dry skin which is an indication of aging and loss of acid flavor.

Melons, Honeydew

Purchase Units:

Crates	45–50 pounds	6–8 count
Cartons	29–32 pounds	4–5 count

Select melons having a soft, velvety, or waxy feel with a yellowish-white to creamy rind color, and a slight softening at the blossom end. A dead white or greenish-white color and a hard, smooth feel are signs of immaturity.

Watch For: Melons with cuts or punctures through the rind, large bruised areas, and decay.

Nectarines

Purchase Units:

Sanger Lugs or Cartons	19–22 pounds	64–82 count (medium)
L.A. Lugs	22–29 pounds	72–90 count

Select fruit having a rich color and plumpness, firm with a slight softening along the seam. Most varieties have an orange-yellow color between the red areas, but some have a greenish color. Russeting or staining of the skin does not detract from the eating quality.

Watch For: Hard, dull, or shriveled fruit which may be immature. Fruit which has cracked or punctured skin or which is soft, overripe, or decayed.

Oranges

Purchase Units:

Cartons, Florida and Texas		43–47 pounds	100–125 count (small)
Cartons, California and Arizona	4/5 pounds	36–39 pounds	88, 113, 138 count, (medium)

Select a heavy, firm, well-colored, well-formed fruit with fine textured skins. Light weight or rough skins are signs of below average juice content. Russet coloring on skin does not affect the eating quality.

Varieties

For Juice: Valencia, Pineapple, Parson Brown, Hamlin

For Salads, Sections, or Slices: Washington Navel, Temple, Tangelo, Murcott, Mandarin (Kinnow, Kara)

Watch For: Dull, dry skin and spongy texture, and discolored, weakened areas around the stem end which indicate aging and deteriorated eating quality.

Peaches

Purchase Units:

Cartons	3/4 bushel	35–42 pounds	100–125 count (medium)
Crates	3/4 bushel 1/2 bushel	35–42 pounds 22–28 pounds	100–125 count 70–90 count
Baskets	3/4 bushel 1/2 bushel	35–42 pounds 22–28 pounds	100–125 count 70–90 count
Lugs		19–29 pounds	60–70 count

Select fruits with plenty of red blush and free from signs of decay. They should be firm, not hard, and the skin between the red areas should have a yellowish cast rather than distinctly green.

Watch For: Small, round, tan spots of decay which usually enlarge and cause waste.

Pears

Purchase Units:

Boxes	45–48 pounds	110–150 count (medium)
Cartons	36–48 pounds	60–150 count
Lugs	21–26 pounds	50–65 count

Select well-formed, smooth fruits free from scars and skin punctures. Firm fruits will ripen on standing. Bartlett pears should be light yellow or greenish yellow. D'Anjou should be pale green to yellowish green. Bosc should be yellow covered by tan or light brown russeting.

Watch For: Pears which are shriveled near stem and those with hard spots on surface.

Pineapple

Purchase Units:

Cartons or Crates	35 pounds	9–12 count

Select fruit having a lively fresh color with plump, glossy eyes or pips, large, and heavy for their size. Fully ripe fruit is golden yellow, orange yellow, or reddish brown, depending on variety, with the exception of Sugar Loaf which remains a green color when ripe.

Watch For: A dull yellowish-green color, sunken or slightly pointed pips, and a dried appearance which are signs of immaturity.

Plums

Purchase Units:

Cartons	4 baskets	26–30 pounds
Crates		24–32 pounds
Lugs		18–30 pounds

Select well-formed fruit with good color for the variety, in a fairly firm to slightly soft stage of ripeness. Plums should have a fresh, bright appearance. Relative hardness, poor color, shriveling, and very tart taste are indications of immaturity.

Watch For: Fruit which has skin breaks or punctures, brown discoloration, or which is excessively soft, leaking, or decayed.

Raspberries

Purchase Units:

Trays	12 pints	9–15 pounds

Select plump, deeply colored, fresh, bright-looking berries; firm, dry, and free from mold. Poorly colored berries are usually tough and sour.

Watch For: Dull appearance, softness, and mold which are signs of age and waste.

Strawberries

Purchase Units:

Trays	12 pints	11–12 pounds

Select highly colored berries which are firm, bright, dry, clean, and free from mold. Lack of good red color usually means poor flavor. Medium to small berries usually have better eating quality than large ones.

Watch For: Soft or moldy berries which are either overripe or decayed.

Tangerines

Purchase Units:

Crates, Florida	45 pounds	210–294 count (small)
Cartons, Florida	30 pounds	
Cartons, California	23–30 pounds	120–176 count (medium)

Select fresh bright fruits, generally well-colored, well-shaped, fairly firm, moderately heavy, and free from decay. Those with dull, dried skins or which are puffy and light in weight may have shrunken and dried flesh.

Watch For: Soft spots on the skin which progress rapidly and cause waste.

Watermelon

Purchase Units:

Whole Melon	15–18 pounds (small) 19–28 pounds (medium)

Select well-formed melons with ends rounded out and good color. Ground scar should have a creamy to light yellow color. Those with small brown pock-marks on rind are not damaged if used promptly. Melons cut in halves in the market are a much surer buy. Look for crisp, red flesh, brown or black seeds and freedom from white streaks.

Watch For: Melons with decay penetrating from stem end.

General Information on Processed Vegetables and Fruits

Canned Vegetables and Fruits

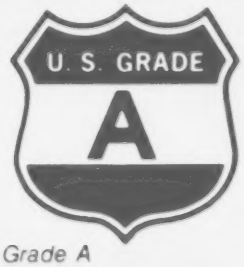
Canned foods vary in quality. One year's crop may differ widely from the next, and even in the same year's crop, a fruit or vegetable may be of high, medium, or indifferent quality. Differences in climate and soil in different localities account for variations in the same kind of product. These differences are reflected in various grades of canned goods.

For some purchasers, quality is a matter of appearance; they demand a product that is uniform in size, color, and texture. Others are satisfied with a less perfect appearance provided no loss of nutritive value or palatability occurs. The school food service buyer should be knowledgable of the factors that determine grading. In addition, the purchaser should

know about the many other factors that enter into specifications for canned goods to be used in the school food service.

Grades and Federal Inspection

U.S. grade standards—measures of quality—have been established for most processed vegetables and fruits by the U.S. Department of Agriculture's Agricultural Marketing Service. Grades are determined by scoring factors characteristic of each product. Grading factors common to all products are (1) color; (2) character, such as tenderness, texture, maturity; (3) uniformity of size and shape; and (4) absence of defects. Other factors are considered for specific items, such as flavor and consistency with corn, and clearness of liquor with peas. The product is scored on these specific quality factors. A range of score points is assigned for each grade, and the grade is determined by the total number of points.
These grade standards are:



U.S. Grade A

Grade A vegetables and fruits are the very best, with an excellent color and uniform size, weight, and shape. Having the proper ripeness and few or no blemishes, vegetables and fruits of this grade are excellent to use for special purposes where appearance and flavor are important.

Grade B vegetables and fruits make up much of the vegetables and fruits that are processed and are of very good quality. Only slightly less perfect than Grade A in color, uniformity, and texture. Grade B vegetables and fruits have good flavor and are suitable for most uses.

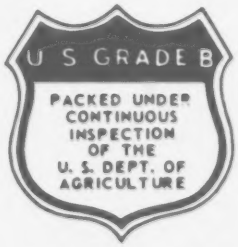
Grade C vegetables and fruits may contain some broken and uneven pieces. While flavor may not be as good as in higher qualities, these vegetables and fruits are still good and wholesome. They are useful where color and texture are not of great importance, such as in puddings, jams, and frozen desserts.

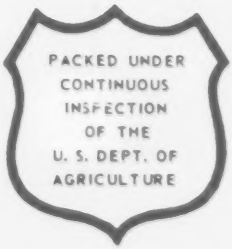
Any processor or distributor may use the terms "Grade A," "Grade B" or "Grade C" on labels to describe the quality of his products, whether or not they have been inspected. But, products so labeled must meet the Department's standards for the grade claimed. Although grade marks of A, B, or C may not be shown on labels, the supplier should be able to inform the school lunch buyer of the quality in terms of the USDA grade-standards which are available to any interested person.

USDA inspection of processed vegetables and fruits assures that wholesome products have been handled in a sanitary manner and processed under sanitary conditions.

The types of inspection available are:

- Lot Inspection: The Department of Agriculture inspects and certifies products as to quality and condition upon the requests of processors, buyers, Federal and State purchasing departments. Applicant pays the cost of inspection.
- Continuous Inspection: This is available to processors who meet high standards of sanitation for plant and equipment. Official inspectors are stationed in plants at all times they are operating. They check sanitation, observe preparation of all raw materials, select samples of the product at random and may issue early reports. When final inspection of the finished product is completed, they issue certificates, as requested, showing final grade of each lot packed. The packer pays the cost of this service.
- Pack Certification: This is available to processors whose plants meet the sanitary standards and use acceptable raw material. An official inspector certifies each lot of the product as it is packed, but may not be present at all times during the processing operations. The packer pays the cost of this service.
- Only those processed vegetables and fruits packed under USDA continuous inspection may be marked with the following shields denoting continuous inspection:





Labels

Federal regulations require that the following information be included on the label of a can or package:

- The common or usual name of the vegetable or fruit.
- The form (or style) of vegetable or fruit, such as whole, slices, or halves. If the form is visible through the package, it need not be stated.
- A list of all ingredients in order of predominance.
- For some, the variety or color.
- Packing medium in which a product is packed must be listed near the name of the product.
- The total contents (net weight) must be stated in ounces for containers holding 1 pound or less. From 1 pound to 4 pounds, weight must be given in both total ounces and in pounds and fractions of a pound. The net weight of a product includes the weight of the product and the sirup or liquid in which it is packed.
- Ingredients, such as spices, flavoring, coloring, special sweeteners, if used, chemical preservatives.
- Any special type of treatment.
- The packer's or distributor's name and place of business.

Remember—The above information should be accurate. If not, or if the product is misbranded in other respects, the packer or distributor is subject to prosecution under the Federal Food, Drug, and Cosmetic Act.

Labels may also give the brand name of the product, quality or grade, size, and maturity of the product, cooking directions, recipes and serving ideas, and storage instructions. If the label lists the number of servings in a container, the law requires that the size of the serving be given in common measures, such as ounces or cups.

The USDA grade shield may be on cans or packages that have been inspected by the USDA.

Factors to Consider in Purchase of Canned Vegetables and Fruits

Style: Forms in which products are packed—whole, halves, chunks, diced, sliced, etc.

Type: Characteristics of products such as red sour or sweet cherries, round or flat green or wax beans, Bartlett or Kieffer pears, etc.

Size: Large or small peas, or small, medium, or large pineapple slices, etc.

Count: Number of pieces in container or contents measured in cups.

Packing Medium: In canned vegetables, liquid is fairly standard. Plain water is added to most vegetables. Water solutions may be composed of water and small amounts of salt (used on most vegetables), or water and small amounts of sugar (used for flavoring products such as peas).

In canned fruits, the most common liquids are:
Sirups—extra heavy, heavy, or light
Sweetened water
Water.

"Heavy pack" products have more fruit and less liquid than the average pack, while "solid pack" products have no liquid added. This pack is regulated by Federal law.

Natural juice may be added to both vegetables and fruits. The most common of these being tomato and pineapple juices. Standard grade tomatoes and crushed pineapple are examples of foods to which natural juices are added.

Container: The institutional sized can most appropriate for purchasing vegetables and fruits for school lunch is the No. 10 can which has an average net weight range from 99 oz (6 lbs 3 oz) to 117 oz (7 lbs 5 oz). (The weight varies due to the different densities of the foods.) The No. 10 can yields an average of 12 to 13 cups. Cans may be plain or enamel-lined. Enamel-lined cans prevent certain foods from reacting with metals of the container. Some schools may want to buy some small size can for "fill in" use.

Score Sheet for Canned and Processed Foods

Name of Product _____ Date _____

	Sample 1	Sample 2	Sample 3	Sample 4
Vendor (Firm)				
No. of Cans Per Case				
Size of Can				
Cost Per Case				
Cost Per Can				
Servings Per Can				
Cost Per Serving				
Weights: Net Drained				
Measure: Liquid Solids				
Style				
Type				
Count				
Packing Medium				
Size				
Texture				
Color				
Flavor				
Absence of defects				

Remarks (include general appearance)

Signature _____

Guide for Substituting Smaller Cans For No. 10 Can

Can size	Average net weight or fluid measure per can	Approx. no. smaller cans
No. 3 Cyl	46 fluid ounces or 51 ounces	2.1
No. 2½	27 ounces to 29 ounces	3.7
No. 2 Cyl	24 fluid ounces	4.2
No. 2	18 fluid ounces or 20 ounces	5.3
No. 303	16 ounces to 17 ounces	6.5

Net Weight: Weight of product and its packing medium.

Drained Weight: Weight of product after the liquid content has been allowed to drain 2 minutes.

The drained weight of canned products should be determined by the following process:

- For a No. 10 can, use a 12-inch circular sieve (8 meshes to the inch) with vertical sides. For tomatoes, use similar sieves, 2 meshes to the inch.
- Record the weight of the dry sieve. Set the sieve over a pan. Empty the contents of the can onto the sieve, distributing the contents evenly. Turn fruit halves upside down to permit draining. Set the sieve in a slightly inclined position to facilitate draining. Allow the product to drain for 2 minutes.
- Promptly weigh the sieve together with the contents. Subtract the weight of the empty sieve. The difference is the drained weight of the product. Drained weight cannot be obtained for such foods as applesauce, creamstyle corn, tomato catsup, tomato puree, and tomato paste. These products must be judged on the net contents per can and on their specific gravity or percent of solids.

Note: There may be slight variations in the net and drained weights of vegetables and fruits because of the various forms in which they are packed. The net and drained weights given under selection factors in this publication are minimums for all forms of vegetables and fruits *unless* otherwise specified.

Fill of Container: Regulations have defined the fill of container for a few canned vegetables and fruits. Containers that fail to meet these requirements must be labeled "Below Standard in Fill." For other vegetables and fruits, cans should be as full as practicable without impairment of quality. The produce and packing medium should occupy not less than 90 percent of the capacity of the can. For example, a No. 10 can should have not more than ⅞-inch headspace.

Code Marking: Canners stamp a code on one end of a can to identify it as to size, date of pack, name of packing plant, and name, grade, and style of the food. The coding is secret, its meaning known only to the canner.

The purchaser can use the code number for reordering the same lot or for reporting a defective product to the distributor. He can report the deficiency to the canner, who can then trace the product back to the packing plant.

Inspect Canned Vegetables and Fruits

Evaluate samples of products supplied by vendors before deciding on which to purchase whenever possible.

- Open cans.
- Examine the product—keep intended use of product in mind.
- Use rating or score sheet to check findings. This sheet should include: (See the example on page 84.)

Kind of food—spinach, peaches
Style and type
Size of container
Net weight
Drained weight
Total number of ½-cup servings
Absence of defects
Count
Packing Medium
General appearance and texture
Color
Flavor
Cost per case
Cost per can or unit
Cost per ½-cup serving
Remarks

- Assess findings. Check against specification.
- If samples were requested and checked prior to submission of order, check order with sample originally requested.

Frozen Vegetables and Fruits

It is worthwhile to check the prices of frozen vegetables and fruits since these items can often be bought at prices comparable to those for fresh or canned items. Some frozen items that are often good buys are green peas, broccoli, spinach, mixed vegetables, and berries.

Frozen foods have standards of quality as do canned foods. Federal grading is the same with the total score determining the grade. Vegetables are usually frozen with a little liquid. Fruits retain flavor and color better when frozen with some sugar.

Careful study should be given the fruit-sugar ratio. Since there is a wide variance in ratios, this information should be requested from the vendor.

The factors used in grading frozen products are: quality, maturity, color, size, shape, and absence of defects. Grades include:
U.S. Grade A (Fancy)
U.S. Grade B (Choice or Extra Standard)
U.S. Grade C (Standard)

Various brands of frozen food items should be compared before they are purchased. The frozen foods should be prepared as recommended and then evaluated for flavor, color, texture, and any other quality pertinent to the food. Frozen foods must be maintained at a temperature of zero degrees Fahrenheit or below until needed.

Table 1—Use of Grades and Styles for Selected Processed Vegetables in the Type A Lunch

Grade	*Style*	*Lunch Component*	*Food and Form*	*Menu Suggestion*
Grade A	Whole	Vegetables (Vegetable Credit)	Sweetpotatoes. Canned	Sweetpotato & Apple Casserole
	Clusters	Vegetable (Vegetable Credit)	Cauliflower. Frozen	Buttered Cauliflower
	Cut	Vegetable (Vegetable Credit)	Green Beans. Canned	Buttered Green Beans
	Diced	Vegetable (Vegetable Credit)	Beets. Canned	Harvard Beets
	Cream	Vegetable (Vegetable Credit)	Corn. Canned	Corn Pudding
	Puree	Meat (Meat Credit)	Tomato Puree. Canned	Meat Sauce with Spaghetti
	Mashed	Dessert (Vegetable Credit)	Pumpkin. Canned	Pumpkin Pie
	Mashed	Vegetables (Vegetable Credit)	Squash. Frozen	Orange Squash
Grade B	Whole	Vegetable (Vegetable Credit)	Peas. Canned	Savory Peas
	Whole	Meat (Meat Credit)	Tomatoes. Canned	Tamale Pie
	Spears	Vegetable (Vegetable Credit)	Broccoli. Frozen	Buttered Broccoli

Table 2—Use of Grades and Styles for Selected Processed Fruits in the Type A Lunch

Grade A	Whole	Salad (Fruit and Meat Alternate Credit)	Prunes. Canned	Peanut Butter Stuffed Prunes
	Segments	Dessert (Fruit Credit)	Grapefruit & Orange Segments. Canned	Citrus Fruit Ambrosia
	Sauce	Meat Accompanied (Fruit Credit)	Applesauce. Canned	Hot Cinnamon Applesauce
	Juice	Beverage (Fruit Credit)	Apple Juice. Canned	Chilled Apple Juice
	Juice	Dessert (Fruit Credit)	Orange Juice. Frozen	Orange Whip
Grade B	Whole	Dessert (Fruit Credit)	Apricots. Canned	Chilled Apricots
	Whole	Bread (Bread Credit)	Blueberries. Canned	Blueberry Muffins
	Halves	Salad (Fruit Credit)	Fruit for Salad. Canned	Mixed Fruit Salad
	Halves	Salad (Fruit and Meat Alternate Credit)	Pears. Canned	Pear Half with Cottage Cheese
	Slices	Dessert (Fruit Credit)	Strawberries. Frozen	Strawberries over Ice Cream
	Slices	Dessert (Fruit Credit)	Peaches. Frozen	Chilled Elberta Peaches
	Diced	Dessert (Fruit Credit)	Fruit Cocktail. Canned	Chilled Fruit Cocktail
Grade C	Whole	Sauce for Meat (Fruit Credit)	Cherries. Canned	Cherry Sauce
	Slices	Dessert (Fruit Credit)	Apples. Canned	Apple Pie
	Slices	Salad (Fruit Credit)	Pineapple Rings. Canned	Pineapple Ring Mold
	Sauce	Salad (Fruit Credit)	Cranberry Sauce. Canned	Cranberry Mold

Dehydrated Vegetables and Fruits

Reducing the moisture content of foods to below the point at which bacteria, molds, and decay can occur readily has long been used as a means of food preservation. At present two methods of drying fruits are used. The older method is drying fruits in the sun or in areas where warm, dry air is allowed to extract the moisture. About 75 percent of the moisture must be removed for the fruit to be called dried. Vacuum dehydration, a more recent development, consists of drying foods by placing them in enclosed chambers where dry, warm, inert gas under vacuum conditions extracts from 95 to 98 percent of the moisture. Because of their lower moisture content, vacuum-dried foods are less perishable and less liable to insect infestation than air-dried.

Federal standards of quality exist for most all dried and low moisture fruits. These standards are as follows:
U.S. Garde A, (Fancy)
U.S. Grade B, (Choice)
U.S. Grade C, (Standard)

The availability of low-moisture vegetables is increasing rapidly. Onions, parsley, green peppers, and garlic are being sold in this form. Dehydrated potato granules, flakes, slices, and diced units are also available. Some potato granules have dried milk added. Quality and yield are most important to consider in purchasing instant dehydrated potatoes. It is always wise when buying dehydrated potatoes to check the pounds of reconstitution—both by examining the package label and, if possible, by sampling.

No Federal standards for these products have been published. It is suggested, however, that the moisture content of vegetables should be 2 to 5 percent. They should be good in color and free from defects such as blemishes, peel, and extraneous material. Potatoes should be mealy and dry after preparation. Cooking is recommended to check on quality. The aroma of the product should be natural and free of moldly or musty odors.

Specifications for dehydrated vegetables and fruits should include:
Materials Used. The product should be clean, sound, mature, and have good cooking quality.
Workmanship. The product should be packed, processed, and prepared under sanitary conditions.
Color. The product should have a bright characteristic color.
Aroma. The product should have good typical aroma, free from scorch, mold, or musty odors.
Moisture. The finished product should not contain more than 2 to 7½ percent moisture.

How to Use Grades and Styles

The grade, style, and medium in which processed vegetables and fruits are prepared affect the cost of the products and how to use them.

Most processed vegetables and fruits are available in at least two grades. To help the buyer choose the grade of vegetables and fruits that will suit the use in mind, the grades of some of the most common vegetables and fruits used in school food service are described in the tables on page 86.

Whole fruits or halves or slices of similar size are more expensive than mixed pieces of various sizes and shapes. You may choose among canned fruits packed in juice, special sweeteners, water, slightly sweetened water, and heavy or extra heavy sirup. The heavier the sirup, the sweeter the fruit, and sometimes the higher the price.

Remember:

Grade A (or Fancy) vegetables and fruits are the most flavorful and attractive and therefore usually the most expensive.

Grade B (or Choice) vegetables and fruits, which are not quite as attractive or tasty as Grade A, are very good quality.

Grade C (or Standard) vegetables and fruits vary more in taste and appearance than the higher grades and cost less. They are useful in many dishes, especially where appearance is not so important.

The grades listed in the suggested specification in this publication are intended as guides for the average school lunch program. A lower or higher grade product may be just as useful. The grade designation is a matter of individual preference and use.

Asparagus, All Green

Purchase Units: Number 10 cans, 6 cans per case

Style: Cut, Spears, Cuts and Tips

Grade: U.S. Grade A (Fancy)

Net Weight: 102 ounces

Drained Weight: 60¼ ounces

Units should have good typical green, light green, or yellowish-green color. Liquor should be clear and free from dirt or grit. Units should be well developed and not more than 10 percent of units with fiber and be practically free from defects. Shattered heads, poorly cut or ragged units, or damaged units should be avoided. Asparagus should have tender texture, good flavor, and be free from undesirable taste and odor.

Watch For: Soft, mushy, or tough fibrous cuts. Shattered, open or flowered heads. Off-color (very light yellow-green) or uneven colored cuts. Stringy or frayed edges. Presence of considerable grit. Too few heads. Noticeable bitter or undesirable taste.

Federal Specification Number: JJJ-V-1746.1

Beans, Green or Wax

Purchase Units: Number 10 cans, 6 cans per case

Style: Cut

Size:
Round, Number 2 (small)
Flat, Number 3 (medium)

Grade: U.S. Grade A (Fancy), round or flat

Net Weight: 101 ounces

Drained Weight: 63 ounces

Product should be prepared from fresh, young immature beans. Liquor should be fairly clear (may be dull or cloudy with noticeable sediment). Units should be practically free from defects (excessive loose seeds, stems, ragged cuts, blemishes or serious blemishes). Beans should be very young and tender and fully fleshed for the variety and practically free from tough or stringy units and have good flavor and odor.

Watch For: Excessively cloudly or off-color liquid. Spotted beans. Beans with large seeds or worm holes. Noticeably soft or mushy beans, lacking a fleshy texture. Presence of excessive unsnipped ends, loose stem ends, tough inedible strings, uneven and ragged units, split units, and small pieces of pods.

Federal Specification Number: JJJ–V–1746/2

Beans, Lima

Purchase Units:
Number 10 cans, (enamel-lined), 6 cans per case

Type: Thick seeded (Fordhook) or thin seeded (Baby)

Grade: U.S. Grade A (Fancy)

Net Weight: 105 ounces

Drained Weight: 72 ounces

Beans should have good color for the type and be practically free of defects such as broken beans, loose skins, blemished or dirty beans. They should have practically clear liquor, normal flavor and odor, and similar varietal characteristics.

Watch For: Off-color. Excessive number of white beans and extraneous material, broken beans, loose skins, blemished beans, and off flavor or odor.

Federal Specification Number: JJJ–V–1746/3

Bean Sprouts

(prepared from Mung beans)

Purchase Units: Number 10 cans, 6 cans per case

Grade: No established U.S. Grades

Net Weight: 102 ounces

Drained Weight: 53 ounces

Beans sprouts should have good characteristic creamy-white to white color and have practically no discolored sprouts, strings, or bean hulls. They should be characteristically tender and have crisp texture; good fresh flavor and odor.

Watch For: Dark, dull gray, or yellow-colored sprouts. Bitter, musty, sour, or excessive acid flavor. Excessive loose hulls and strings. Sprouts that are tough and stringy.

Federal Specification Number: None

Beets

Purchase Units:
Number 10 cans, (enamel-lined), 6 cans per case

Style: Sliced, Diced, Whole, or Julienne (shoestring)

Type: Plain, Pickle, Harvard

Size: Medium

Grade: U.S. Grade A (Fancy)

Net Weight: 104 ounces

Drained Weight: 68 ounces

Beets should be prepared from fresh, tender beets; and be topped, washed, properly peeled, and trimmed. They should have good uniform, bright color that is typical of beets of similar varieties and be practically uniform in size, practically free from defects (slabs, crushed, broken or cracked units, units with excessively frayed surfaces, unpeeled areas or blemished units) and have a tender texture. Beets should not be fibrous, tough or hard. Beets should have normal flavor and odor.

Watch For: Excessive number of end cuts, woodiness, coarse texture, and excessive softness. Black spots, pieces of peel, frayed edges and off-color, brown, or light pink beets. Deep cuts indicating mechanical or insect injury.

Federal Specification Number: JJJ–V–1746/4

Carrots

Purchase Units: Number 10 cans, 6 cans per case

Style: Diced, Sliced

Grade: U.S. Grade A (Fancy)

Net Weight: 105 ounces

Drained Weight: 63 ounces

Carrots should have a typical, bright, orange-yellow color and be not more than slightly affected by green units. They should have clear liquor and be free from dirt, grit, and other foreign matter. Units should be practically free from defects and mechanical injury. Carrots that are blemished by black or brown discolorations and unpeeled units should be avoided. Carrots should have a tender uniform texture and be firm but not fibrous. Flavor and odor should be normal.

Watch For: Off-color showing a grayish or brownish cast, excessive number of pale and white carrots. Presence of tough or woody carrots showing softness. Poor trimming and peeling. Deep cuts resulting from insect or mechanical injury.

Federal Specification Number: JJJ–V–1746/5

Corn, Cream Style

Purchase Units:
Number 10 cans, (enamel-lined), 6 cans per case

Style: Cream

Type: Golden or White

Grade: U.S. Grade A (Fancy)

Net Weight: 106 ounces

Corn, cream style, should be made from cut kernels of uniform, bright color and be practically free of off-variety kernels. It should have a heavy consistency with practically no separation of free fluid and be practically free of defects such as silks, cob tissue, husks, discolored or damaged kernels. It should have a very good flavor.

Watch For: Dull color in golden varieties and a brownish color in white varieties. Cob tissue and tough or leathery kernels, clusters of kernels, worm-eaten kernels. Excessively sweetened or salted corn and "can black."

Federal Specification Number: JJJ–V–1746/6

Corn, Whole Kernel

Purchase Units:
Vacuum Pack
Wet Pack
Number 10 cans, (enamel-lined), 6 cans per case

Style: Whole Kernel

Type: Golden or White

Grade: U.S. Grade A (Fancy)

Net Weight: 106 ounces

Drained Weight:
70 ounces, Wet Pack
75 ounces, Vacuum Pack

Corn should be whole grains of uniform, bright color and have the flavor of young fresh, sweet corn. Grains should be evenly cut, tender, and practically free from defects such as silks, husks, cob tissue, and hard grains. Corn should not be discolored or have damaged kernels.

Watch For: Dull color in golden varieties; and in white varieties, a brownish cast. Irregular or ragged cut kernels with cob tissue attached, tough or leathery kernels, clusters of grain, and worm-eaten kernels. Excessively sweetened or salted corn and "can black."

Federal Specification Number: JJJ–V–1746/6

Greens, Leafy

Purchase Units: Number 10 cans, 6 cans per case

Style: Whole Leaf, Cut or Sliced, and Chopped

Type: Collards, Kale, Mustard Greens, Turnip Greens

Grade: U.S. Grade A

Net Weight: 98 ounces

Drained Weight: 58 ounces

Greens should have good flavor and odor. They should have good color and have good character and be practically free of defects.

Watch For: Poor flavor or odor. Off color and tough, coarse, leaves or stems. Root stubs, weeds, and seed heads in greens.

Federal Specification Number: JJJ–V–1746/24

Juices, Vegetable

Tomato Juice (100% juice)

Purchase Units:
Number 3 Cylinder (can ends enamel-lined), 12 per case

Grade: U.S. Grade A

Net Content: 46 fluid ounces

Tomato juice should have a color typical of well-ripened red tomatoes which have been properly prepared and processed. Juice should be practically free from defects, possess a good flavor, and have a fairly good consistency.

Watch For: Skins, seeds, black specks, and other coarse or hard substances.

Federal Specification Number: JJJ–V–1746/8a

Mushrooms

Purchase Units: Number 10 cans, 6 cans per case

Style: Whole, Buttons, Sliced Whole, Sliced Buttons, Stems and Pieces.

Type: White or Cream Brown

Grade: U.S. Grade A

Drained Weight: 68 ounces

Mushrooms should have good uniform color and be practically uniform in size and shape. They should be practically free of defects such as crushed or broken units or damaged units. Mushrooms should be firm and have tender units.

Watch For: Excessive white or dark color. Tough or rubbery units, and fibrous or woody caps.

Federal Specification Number: JJJ–V–1746/9

Okra

Purchase Units: Number 10 cans, 6 cans per case

Style: Cut, Whole

Type: Partially Fermented or Not Fermented

Grade: U.S. Grade A

Net Weight: 99 ounces

Drained Weight: 60 ounces

Okra should have similar varietal characteristics and good color. It should be practically uniform in size and free from defects, discolorations, and tough spots on the pod.

Watch For: Poor or unpleasant flavor. Ragged cut or trim, and discolored or diseased spots on pods.

Federal Specification Number: JJJ–V–1746/10

Okra with Tomatoes

Purchase Units: Number 10 cans, 6 cans per case

Grade: U.S. Grade A

Net Weight: 101 ounces

Okra should have similar varietal characteristics and good color. It should be practically uniform in size and free from defects, discolorations, and tough spots on pods. Tomatoes should be whole or in large pieces and have typical red color and reasonably free from undercolored parts, pieces of skin, cores, and blemishes or defects.

Watch For: Okra with poor or unpleasant flavor, ragged cut or trim pods, and discolored or diseased pods. Tomatoes with pale red color or yellow and green portions, and with excessive skin, core material, or blemish units. Tomatoes with noticeable watery or soft pieces and presence of mold or insects. Tomatoes with poor flavor.

Federal Specification Number: JJJ–V–1746/21

Peas, Blackeye

Purchase Units: Number 10 cans, 6 cans per case

Style: With Snaps or Without Snaps

Grade: U.S. Grade A

Net Weight: 107 ounces

Drained Weight: 72 ounces

Blackeye peas should have good color and be practically free of defects. They should be fairly young units in fairly early stage of maturity and have similar varietal characteristics.

Watch For: Poorly colored peas and mashed or broken peas. Cloudy packing medium and mealy or hard peas as well as mixed varieties.

Federal Specification Number: JJJ–V–1746/12

Peas and Carrots

Purchase Units:
Number 10 cans, (enamel-lined), 6 cans per case

Grade: No established U.S. Grades. Peas should be of a quality equal to or better than U.S. Grade B. Carrots should be equal to U.S. Grade A.

Net Weight: 105 ounces

Product should contain not less than 50 percent by weight of early or sweet-type peas. Size:
Early—Numbers 3 and 4; Sweet—Numbers 4 and 5.

Product should be not less than 25 percent by weight of diced carrots, predominately $^1/_2$- to $^3/_8$-inch cubes.

Peas should be prepared from a single variety and have a reasonably clear liquor, reasonably good color, and be reasonably bright and free from peas that materially detract from the overall color. They should be reasonably free from defects such as broken peas, damaged or discolored units and thistle buds or pods, and be reasonably free from ruptured skins. Peas should have normal flavor and color.

Carrots should have a typical, bright, orange-yellow color and be not more than slightly affected by green units. Liquor should be clear and free from dirt, grit, and other foreign matter. Units should be practically free from defects, mechanical injury, blemishes by black or brown discolorations, and unpeeled units. Carrots should have a tender, uniform texture, and be firm but not fibrous. They should have a normal flavor and odor.

Watch For: Noticeable cloudy liquor and accumulation of sediment. Variations of color and off-color peas. Presence of spotted, discolored, or broken peas. Excessive hardness or mushiness, variability of color, and tough or mealy peas. Presence of foreign material such as pea pods and thistle buds. Off-color carrots showing a grayish or brownish cast. Excessive number of pale and white carrots. Presence of tough or woody carrots showing softness, poor trimming, and peeling. Deep cuts resulting from insect or mechanical injury.

Federal Specification Number: JJJ–V–1746/27.

Peas, Green

Purchase Units:
Number 10 cans, (enamel-lined), 6 cans per case

Type: Early or Sweet

Size:
Early—Number 3 or smaller
Sweet—Number 4 or smaller

Grade: U.S. Grade B (Extra-Standard)

Net Weight: 105 ounces

Product should be prepared from green peas of a single variety. They should have reasonably clear liquor and reasonably good color. Peas should be reasonably bright and free from peas that materially detract from the overall color. Peas should be reasonably free from defects such as broken peas, damaged or discolored units, and thistle buds or pods. Peas should be reasonably free from ruptured skins and have normal flavor and odor.

Watch For: Noticeable cloudy liquor and accumulation of sediment. Variations of color, off-color peas, presence of spotted, discolored, or broken peas. Excessive hardness or mushiness. Variability of color, tough or mealy peas, presence of foreign material such as pea pods and thistle buds.

Federal Specification Number: JJJ–V–1746/13

Pickles, Cucumber

Purchase Units: 1-gallon jars, 4 gallons per case

Cucumbers are the most common item pickled, but green tomatoes, onions, cauliflower, cabbage, corn, beans, green and ripe (red) pepper, carrots, peaches, pears, corn, and other fruits and vegetables may be pickled. The pickling process may be a natural cure or with hot vinegar, sugar, salt, and spices. Pickles used for salt stocks are fermented in a high-salt brine containing 8 to 10 percent salt. Pickles to be cured naturally (also called "genuine" pickles) are fermented in a brine containing approximately 5 percent salt. Flavoring ingredients, such as dill, dill emulsion and vinegar, may be added to genuine pickles while processing is going on.

Top quality cucumber pickles should be uniform in shape, almost cylindrical, with well-rounded ends, smooth and uniform color, and few defects that are obvious or objectionable. Curved or misshapen pickles are considered defects. Sweet pickles will have color intensifed and a firmer texture because of the effect of sugar on the cellulose of the pickle. The texture of pickles should be firm and crisp. They should break clean with a snap. They should not be soft, slippery or contain hollow, spongy centers. The interior flesh should be uniform in color and translucent. There should not be any white or opaque flesh or badly shriveled pickles outside tolerance allowances.

The pickles should be free from any objectionable flavors and should possess the characteristic normal flavor for the type of pickle. They should meet standards for acidity, sugar and salt content. Color should be typical, practically uniform, and practically free from bleached areas. Uniformity in size within reasonable limits is a requirement. Check for damaged units.

Types:

Kosher are natural or processed dills having garlic, onions and peppers added. (Peppers and onions are optional ingredients).

Natural, Genuine, Polish or Hungarian Dills contain onions, garlic, and red peppers.

Sweet Dills are slightly less sweet than sweet pickles.

Dill Sticks are dilled pickles cut in smaller sizes than quarters.

Sour Pickles are pickles with vinegar added. Spices may or may not be added.

Sweet pickles are pickles with sweetening and vinegar added. Spices may or may not be added.

Sizes:

Size	Count	Recommended Length (inches)
Midgets	330–444 per gallon	Over $1^1/_2$ but not over 2
Gherkins	100–329 per gallon	Over 2 but not over $2^3/_4$
Small	52–99 per gallon	Over $2^3/_4$ but not over $3^1/_2$
Medium	40–51 per gallon	Over $3^1/_2$ but not over 4
Large	22–39 per gallon	Over 4 but not over $4^3/_4$
Extra Large	16–21 per gallon	Over $4^3/_4$ but not over $5^1/_4$

Grades:
U.S. Grade A
U.S. Grade B

Federal Specification Number: JJJ–P–391

Pimentos

Purchase Units: Number 10 cans, 6 cans per case

Style: Whole, Pieces, Chopped

Grade: U.S. Grade A

Net Weight: 105 ounces

Drained Weight:
Whole-70.7 ounces, minimum
Pieces and Chopped-74.0 ounces, minimum

Pimentos should have uniform bright full red color and have practically whole pods that remains intact when stem end, core, and seed cells are removed. They should have plump flesh that is not mushy and can be handled without tearing or breaking. Pimentos should have practically no defects such as blemishes and pieces of skin and good typical flavor.

Watch For: Poor color showing orange, yellow, or green. Excessive tears or cracks. Black specks and noticeable unpalatable flavor.

Federal Specification Number: JJJ–V–1746/14

Potatoes

Purchase Units: Number 10 cans, 6 cans per case

Style: Small Whole

Count: 100–125

Net Weight: 102 ounces

Drained Weight: 74 ounces

Potatoes should have similar varietal characteristics and practically no oxidation. They should be practically free of defects, such as discolored eyes, scab, blight, or other blemishes. Potatoes should have good texture and be reasonably uniform in size.

Watch For: Oxidized units. Poor peeling, grit, and gouges.

Federal Specification Number: JJJ–V–1746/16

Pumpkin

Purchase Units: Number 10 cans, 6 cans per case

Grade: U.S. Grade A (Fancy)

Net Weight: 106 ounces

Pumpkin should have practically uniform bright color, good consistency, and a fine-grained smooth finish. There should be no silt, sand, or grit and practically no pieces of seed, coarse, dark or off-colored particles or no fiber.

Watch For: Gray, tan or dull color. Excessive free liquor. Coarse, pasty finish. Excessive pieces of seed, dark particles, and fiber.

Federal Specification Number: JJJ–V–1746/17

Pumpkin Pie Filling

Purchase Units: Number 10 cans, 6 cans per case

Net Weight: 112 ounces

Pumpkin pie filling should not be purchased without first preparing and testing products made from various brands. Samples should be compared for flavor, consistency, and color.

Federal Specification Number: None

Sauerkraut

Purchase Units: Number 10 cans, 6 cans per case

Style: Shredded

Grade: U.S. Grade B

Net Weight: 99 ounces

Drained Weight: 80 ounces

Sauerkraut should have reasonably good cream to light straw color that is reasonably bright and uniform and general appearance characteristic of properly prepared kraut. It should be at least fairly well cut. The presence of a small amount of very short and fine, or large irregular pieces does not seriously affect the appearance. Kraut should be reasonably free from major or minor defects (blemished, spotted or discolored pieces of leaves, shreds or core material) that materially affect the appearance or eating. It should be reasonably crisp and reasonably firm and have reasonably good flavor and odor.

Watch For: Off-color (decided green, brown, or pink color). Excess of coarse leaves, pieces of core, blemished, spotted, or discolered pieces of leaf or core. Soft or mushy or tough texture. Off flavors or odors.

Federal Specification Number: JJJ–V–1746/18

Spinach

Purchase Units: Number 10 cans, 6 cans per case

Grade: U.S. Grade A (Fancy)

Net Weight: 98 ounces

Drained Weight: 58 ounces

Spinach should have uniform green color and tender young leaves and stems. It should be free from objectionable or off flavors and be practically free from defects. Liquor should be bright and free from grit and other foreign matter.

Watch For: Pale color or a decided brown cast. Presence of grit, grass blades, or small weeds. Soft, mushy leaves or presence of tough fibrous stems and leaves and leaves damaged by insects, mildew, etc.

Federal Specification Number: JJJ–V–1746/19

Succotash

Purchase Units: Number 10 cans, 6 cans per case

Style: Whole kernel corn and lima beans or green beans; or cream style corn and lima beans or green beans

Grade: U.S. Grade A

Net Weight: 105 ounces

See selection factors for component vegetables.

Federal Specification Number: None

Sweetpotatoes

Sirup Pack

Purchase Units: Number 10 cans, 6 cans per case

Style: Whole

Grade: U.S. Grade A (Fancy)

Count: 40–45

Packing Medium: Heavy Sirup

Net Weight: 102 ounces

Drained Weight: 72 ounces

Sweetpotatoes should have uniform, bright, typical light yellow to deep golden color and be tender and have uniformly smooth texture. They should be free from hard, mushy, fibrous, decayed, or discolored potatoes and be properly peeled and trimmed.

Watch For: Presence of coarse fibers, fibrous ends, irregular shapes, broken pieces, and very light color. Tendency to mushiness.

Federal Specification Number: JJJ–V–1746/15

Sweetpotatoes

Vacuum Pack

Purchase Units:
Number 3 vacuum cans, (enamel-lined), 24 cans per case

Grade: U.S. Grade A (Fancy)

Count: 6 to 20

Sweetpotatoes should have uniform bright, typical light yellow to deep golden color, be tender, and have uniformly smooth texture. They should be free from hard, mushy, fibrous, decayed, or discolored potatoes and be properly peeled and trimmed.

Watch For: Presence of coarse fibers, fibrous ends, irregular shapes, broken pieces, and very light color. Tendency to mushiness.

Federal Specification Number: JJJ–V–1746/15

Tomatoes

Purchase Units: Number 10 cans, 6 cans per case

Grade: U.S. Grade B (Extra-Standard)

Net Weight: 102 ounces

Drained Weight: 63½ ounces

Tomatoes should be whole or in large pieces, have a typical red color and be reasonably free from undercolored parts, pieces of skin, cores, blemishes, or other defects.

Watch For: Pale red color or yellow and green portions. Excessive skin, core material, or blemished units. Noticeably watery or soft pieces. Presence of mold or insects and poor flavor.

Federal Specification Number: JJJ–V–1746/20

Tomato Paste

Purchase Units: Number 10 cans, 6 cans per case

Grade: U.S. Grade A (Fancy)

Texture: Fine

Concentration: Heavy

Solids: 33 percent

Net Weight: 114 ounces

Tomato paste should have a good ripe tomato color and be practically free from defects. It should have not more than a slight amount of minute particles of seed or tomato peel. Paste should have a typical tomato paste flavor and be free from scorched, bitter, green tomato flavor, and objectionable odors.

Watch For: Off-color, scorched, bitter, or green tomato flavor. Excessive black specks. Ready separation of watery liquid.

Federal Specification Number: JJJ–V–1746/22

Tomato Puree

Purchase Units: Number 10 cans, 6 cans per case

Grade: U.S. Grade A (Fancy)

Texture: Coarse or Fine

Concentration: Heavy

Net Weight: 106 ounces

Tomato puree should have a good, red, ripe tomato color and be practically free from defects. Puree should not have more than a slight amount of minute particles of seed, tomato peel, or core material. It should have a typical tomato puree flavor and be free from objectionable flavors or odors.

Watch For: Off-color, predominately yellowish red solids. Scorched, bitter, salty, or green tomator flavor, excessive dark specks, and scale-like particles from seeds, tomato peel, or core. Poor consistency tending to thinness.

Federal Specification Number: JJJ–V–1746/23

Tomato Sauce

Purchase Units: Number 10 cans, 6 cans per case

Grade: U.S. Grade A

Net Weight: 106 ounces

Tomato sauce should have a good, red, ripe tomato color and be practically free from defects. It should not have more than a slight amount of minute particles of seed, tomato peel, or core material. Sauce should have a typical tomato puree flavor and be free from objectionable flavors or odors.

Watch For: Off-color, predominately yellowish red solids. Scorched, bitter, salty, or green tomato flavor. Excessive dark specks and scale-like particles from seeds, tomato peel, or core. Poor consistency tending to thinness.

Federal Specification Number: None

Apples

Purchase Units: Number 10 cans, 6 cans per case

Style: Slices, Solid Pack

Grade: U.S. Grade C (Standard)

Net Weight: 100 ounces

Drained Weight: 96 ounces, minimum

Apples of similar variety should have segments fairly uniform in size. Color may vary and apples may have slightly brown, gray, or pink cast. They should have a fairly uniform tender texture and have normal flavor and be fairly free of defects.

Watch For: Hardness or softness. Excessive brown, gray, or pink color. Inedible tissue, excessive skin, bruises, or other defects.

Federal Specification Number: Z–F–1742/1

Applesauce

Purchase Units: Number 10 cans, 6 cans per case

Style: Regular (comminuted) or Chunky

Type: Sweetened or Unsweetened

Flavor: Natural, Flavored, or Spiced

Grade: U.S. Grade A (Fancy)

Net Weight: 108 ounces

Applesauce should be made from apple pulp reduced to heavy consistency which mounds when poured. It should be medium sweet, typical bright color, and have fine grain finish (granular but not lumpy). Applesause should have distinct apple flavor and be practically free from defects.

Watch For: Thin consistency. Dull or poor color or pink color. Off-flavor, particles of seeds, flecks from bruised portions, and peel or inedible tissue.

Federal Specification Number: Z–F–1742/3

Apricots

Purchase Units: Number 10 cans, 6 cans per case

Style: Halves, (Unpeeled) or Whole (Peeled)

Grade: U.S. Grade B (Choice)

Count: 83–108, Medium

Packing Medium: Heavy Sirup

Net Weight:
Halves, 108 ounces
Whole, 108 ounces

Drained Weight:
Halves, 62 ounces, minimum
Whole, 60 ounces, minimum

Canned apricots should be prepared from fresh, ripe, clean, sound apricots which are properly pitted and halved. They should have similar varietal characteristics, normal flavor and odor. Apricots should have reasonably good color, size, and symmetry and be reasonably free from defects and have reasonably tender texture.

Watch For: Pale yellow color exceeding more than half of each apricot and light greenish yellow color exceeding more than one fourth each apricot. Noticeable brown coloring. Excessive broken or crushed halves, lack of uniformity in size and thickness. Presence of "loose" pits, dirt, grit, excessive damage, and oxidation.

Federal Specification Number: Z–F–1742/4

Bananas

Purchase Units: Number 10 cans, 6 cans per case

Style: Mashed, Slices

Net Weight:
Mashed, 116 ounces
Slices, 112 ounces

Canned bananas should be processed from fresh ripe bananas, pureed or sliced. Color stability is achieved by enzyme inactivation in the sterilization process. Sliced bananas are packed in heavy sirup.

Federal Specification Number: None

Blackberries

Purchase Units:
Number 10 cans, (enamel-lined), 6 cans per case

Grade: U.S. Grade B (Choice)

Packing Medium: Heavy Sirup

Net Weight: 106 ounces

Drained Weight: 62 ounces

Canned blackberries should be prepared from whole, firm blackberries with reasonably good color, and be reasonably uniform in size. They should be reasonably free from defects and have good character.

Watch For: Excessive irregularity of size. Off-color, noticeably hard or seedy berries, and mashed or soft berries. Marked presence of leaves and stems.

Federal Specification Number: Z–F–1742/5

Blueberries

Purchase Units:
Number 10 cans, (enamel-lined), 6 cans per case

Grade: U.S. Grade B (Choice)

Packing Medium: Light Sirup

Net Weight: 105 ounces

Drained Weight: 55 ounces

Blueberries should have good dark blue-purple color, be reasonably free of defects, and have reasonably good character.

Watch For: Presence of leaves, large stems, cap stems, and undeveloped berries. Crushed, mushy or soft berries, and grit or sand.

Federal Specification Number: Z–F–1742/6

Boysenberries

Purchase Units:
Number 10 cans, (enamel-lined), 6 cans per case

Grade: U.S. Grade B (Choice)

Packing Medium: Heavy Sirup

Net Weight: 106 ounces

Drained Weight: 62 ounces

Boysenberries should have good dark blue-purple color, be reasonably free of defects, and have reasonably good character.

Watch For: Presence of leaves, large stems, cap stems, and undeveloped berries. Crushed, mushy or soft berries, and grit or sand.

Federal Specification Number: Z-F-1742/5

Cherries, Red, Tart

Purchase Units:
Number 10 cans, (enamel-lined), 6 cans per case

Style: Pitted

Type: Red, Tart

Grade: U.S. Grade C (Standard)

Packing Medium: Water

Net Weight: 103 ounces

Drained Weight: 72 ounces

Cherries should have fairly good typical red color, with normal red tart cherry flavor. They should be fairly free from defects and pits (not more than 1 pit for each drained 20 ounces), and be fairly firm with a fleshy texture.

Watch For: Excessive number of pits, loose, soft, tough or leathery cherries, and defects that extend into fruit tissue.

Federal Specification Number: Z-F-1742/6

Cranberry Sauce

Purchase Units: Number 10 cans, 6 cans per case

Style: Jellied or Strained, or Whole

Grade: U.S. Grade A

Net Weight: 117 ounces

Cranberry sauce should have good color, consistency, and texture. It should be practically free from defects such as stems, pieces of leaf, burned or scorched spots, and be free from oxidized color. Product should have a bright color, good typical flavor, and odor.

Watch For: Excessive number of stems or pieces of leaf. Poor color.

Federal Specification Number: Z-F-1742/7

Fruit Cocktail

Purchase Units: Number 10 cans, 6 cans per case

Grade: U.S. Grade B (Choice)

Packing Medium: Light Sirup

Net Weight: 106 ounces

Drained Weight: 71 ounces

Fruits should have reasonably good color and be practically free from staining from the artificial dye when Maraschino cherries are used. Packing medium may be slightly cloudy and may contain small quantities of sediment. Units of each fruit should be reasonably uniform in size, reasonably free from defects, reasonably firm and tender, and have a reasonably good texture with a normal flavor. Fruit cocktail should contain not less nor more than:

30–50 percent peaches
25–45 percent pears
6–16 percent pineapple
6–20 percent grapes (seedless)
2–6 percent cherries

Watch For: Excessive sediment, poor color, presence of hard or mushy pieces of fruit, and excessive number of cap stems on the grapes. Fruit variability in size or excessively small.

Federal Specification Number: Z-F-1742/9

Fruits for Salad

Purchase Units: Number 10 cans, 6 cans per case

Grade: U.S. Grade B (Choice)

Packing Medium: Heavy Sirup

Net Weight: 108 ounces

Drained Weight: 64 1/2 ounces

Fruits should have fairly good color, and be practically free of staining from artificial dyes. Units of each fruit should be fairly uniform in size and fairly free of defects. Fruits should be reasonably tender and have reasonably good texture.

Watch For: Excessive sediment in packing medium. Poor color with oxidation. Peel, hard, crushed, or frayed fruit.

Federal Specification Number: None

Fruit Pie Fillings

Purchase Units: Number 10 cans, 6 cans per case

Flavors: Apple, Apricot, Blueberry, Cherry, Peach, and Pineapple.

Net Weight: 112 ounces

Pie fillings should not be purchased without first preparing and testing products made from various brands. Samples should be compared for flavor, consistency, texture, and color.

Federal Specification Number: None

Grapefruit Sections

Purchase Units: Number 3 Cylinder, 12 per case

Style: Whole Segments

Grade: U.S. Grade A (Fancy)

Packing Medium: Heavy Sirup

Net Weight: 50 ounces

Drained Weight: 27.5 ounces

Grapefruit sections should have typical bright color and have few broken segments. They should be practically free from defects and have normal canned grapefruit flavor. Texture should be moderately firm and fleshy.

Watch For: Color lacking brightness, noticeable tinge of amber color, and excessive number of broken segments. Floating free cells and mushy, fibrous segments. Prominent presence of seeds and portions of membranes. Noticeable scorched, bitter, or flat taste.

Federal Specification Number: Z-F-1742/10

Grapefruit and Orange Sections

Purchase Units: Number 3 Cylinder, 12 per case

Grade: U.S. Grade A (Fancy)

Packing Medium: Heavy Sirup

Net Weight: 50 ounces

Drained Weight: 29 ounces

Drained weight of orange fruit should be not less than 37.50 percent nor more than 60 percent of the drained weight of the product. Drained weight of product should not be less than 56.25 percent of container capacity.

Watch For: Color lacking brightness, noticeable tinge of amber color, and excessive number of broken segments. Floating free cells and mushy, fibrous segments. Prominent presence of seeds and portions of membranes. Noticeable scorched, bitter or flat taste.

Federal Specification Number: None

Juices, Fruit

Apple Juice (100% Juice)

Purchase Units:
Number 3 Cylinder, (enamel-lined), 12 per case

Type:
Clarified (filtered)
Non-clarified (cloudy)

Grade: U.S. Grade A (Fancy)

Net Content: 46 fluid ounces

Apple juice should have bright typical color. As defined by U.S. Standards, juice should have brix not less than 11.5°, acid not less than 0.25 g nor more than 0.70 g/100 ml calculated as malic.

Watch For: Oxidized or astringent flavor. Presence of apple pulp, seeds or other sediment.
Federal Specification Number: Z-F-1742/11

Juices, Fruit

Grape Juice (100% Juice)

Purchase Units:
Number 3 Cylinder, (enamel-lined), 12 per case

Type: Concord

Style: Sweetened or Unsweetened

Grade: U.S. Grade A

Net Content: 46 fluid ounces

Juice should have a bright purple or reddish color, be free of pulp, skins, and tartrate crystals. It should have a distinct flavor. Brix acid ratio not less 14 to 1 nor more than 28 to 1.

Watch For: Tartrate crystals, skins and pulp, scorched or carmelized flavor.

Federal Specification Number: Z-F-1742/12

Juices, Fruit

Grapefruit Juice (100% Juice)

Purchase Units:
Number 3 Cylinder, 12 cans per case

Type: Sweetened or Unsweetened

Grade: U.S. Grade A (Fancy)

Net Content: 46 fluid ounces

Grapefruit juice should have color typical of fresh squeezed juice and be free of browning or oxidation. Juice should be practically free of defects, show no coagulation, have no noticeable seed particles, and have a normal flavor.

Watch For: Caramelized or oxidized flavor. Dull, murky, or off color. Excessive seed particles, suspended pulp, or residue.

Federal Specification Number: Z–F–1742/14

Juices, Fruit

Orange Juice (100% Juice)

Purchase Units:
Number 3 Cylinder, 12 cans per case

Type: Sweetened or Unsweetened

Grade: U.S. Grade A

Net Content: 46 fluid ounces

Orange juice should have color typical of fresh squeezed juice and be free of browning or oxidation. Juice should be practically free of defects, show no coagulation, have no noticeable seed particles, and have a normal flavor.

Watch For: Caramelized or oxidized flavor. Dull, murky, or off-color. Excessive seed particles, suspended pulp, or residue.

Federal Specification Number: Z–F–1742/17

Juices, Fruit

Pineapple Juice (100% Juice)

Purchase Units: Number 3 Cylinder, 12 per case

Type: Sweetened or Unsweetened

Grade: U.S. Grade A

Net Content: 46 fluid ounces

Pineapple juice should have undiluted unfermented bright, light yellow to golden yellow color and be practically free of defects. Juice should have a distinct flavor and no coagulation of pulp.

Watch For: Off-flavor. Seed particles and excessive free and suspended pulp. Dull or dark color, and coagulated pulp.

Federal Specification Number: Z–F–1742/19

Olives

Purchase Units:
Quart, glass, 12 per case
Gallon, 4 per case
Number 10 cans, 6 per case

Style: Pitted

Type: Green or Ripe

Grade: U.S. Grade A, Pitted

Drained Weights:
Green Whole
1 quart, 17 ounces
1 gallon, 88 ounces—Medium Olives
1 gallon, 86 ounces—Large Olives

Ripe, Medium and Large
Number 10 can, 66 ounces—Whole Olives
Number 10 can, 50 ounces—Broken, pitted

Olives should have good flavor that is characteristic of the type. They should be practically uniform black to dark brown color for ripe olives and yellow-green to green color for green olives. They should be practically uniform in size and practically free of defects and with good texture and character.

Watch For: Off-color fruit, off-flavor, and odor. Units with internal or external discolorations, pits or pit fragments.

Federal Specification Number: Y–O–451

Peaches, Cling

Purchase Units: Number 10 cans, 6 cans per case

Style: Halves, Slices

Type: Yellow Cling

Grade: U.S. Grade B (Choice)

Count: 36–54 Halves

Packing Medium: Heavy Sirup

Net Weight: 108 ounces

Drained Weight: 66½ ounces

Yellow cling peaches should have reasonably uniform color that is practically free from any brown color due to oxidation. They should be reasonably uniform in size and symmetry, and be reasonably free from defects such as blemished, broken,

crushed units, and peel. Units should be reasonably tender and have texture typical of properly ripened fruits, not more than slight fraying.

Watch For: Off-color or wide color variation. Excessive variation in size, symmetry, and thickness. Discoloration, excessive softness, or hard units. Crushed or broken pieces, presence of excessive loose pits, stems, and leaves.

Federal Specification Number: F–1742/21

Peaches, Freestone

Purchase Units: Number 10 cans, 6 cans per case

Style: Halves, Slices

Type: Freestone, Elberta

Grade: U.S. Grade B (Choice)

Count: 36–54 Halves

Packing Medium: Heavy Sirup

Net Weight: 108 ounces

Drained Weight: 66½ ounces

Peaches should have similar varietal characteristics, normal flavor, and odor. They should have reasonably good color and character, and be reasonably free from defects, and reasonably uniform in size and symmetry. There should be reasonably few blemished units, crushed or broken units and peel. Peaches may be soft or materially frayed but not mushy.

Watch For: Off-color or wide color variation. Excessive variation in size, symmetry, and thickness. Discoloration, excessive softness, or hard units. Crushed or broken pieces, presence of excessive loose pits, stems, and leaves.

Federal Specification Number: F–1742/21

Peaches, Freestone

Purchase Units: Number 10 cans, 6 cans per case

Style: Slices

Type: Freestone

Grade: U.S. Grade C (Standard)

Packing Medium: Light Sirup

Net Weight: 108 ounces

Drained Weight: Varies considerably

Peaches should be wholesome fruit of good flavor, and fairly uniform in color, and have a reasonable proportion of small pieces. They should be fairly free from defects such as skin, and spotted or discolored units. Peaches may be soft but not broken or disintegrated to distort normal shape.

Watch For: Discolored or darkened peaches. Excessive softness and disintegration. Presence of hard units indicating immaturity.

Federal Specification Number: F–1742/21

Pears

Purchase Units: Number 10 cans, 6 cans per case

Style: Halves (Peeled), Slices, or Quarters

Type: Bartlett

Grade: U.S. Grade B (Choice)

Count: 26 or more halves

Packing Medium: Heavy Sirup

Net Weight: 106 ounces

Drained Weight:
Halves—62.2 ounces, minimum
Slices, Quarters—65.5 ounces, minimum

Pears should be prepared from fully matured, sound Bartlett pears that are well-peeled and cored, properly cleaned, and evenly halved. They should have reasonably good color, bright and translucent (may be "chalky" or "dead white" or have a slight tint of pink). Pears should be ripe and tender, and reasonably uniform in size and symmetry. They should be reasonably free from defects including peel, blemished, broken or crushed units, trimmed units or stems, and be reasonably tender, slightly firm, ragged or soft, but not mushy.

Watch For: Noticeable "dead white" or "chalky" pears or pears with a decided pink or brown cast. Mushiness or partly crushed or broken pears. Presence of toughness, hardness, or graininess and misshapen units that are poorly peeled and trimmed. Presence of interior stems.

Note: Graininess does not normally occur in Bartlett pears.

Federal Specification Number: Z–F–1742/22

Pineapple, Slices

Purchase Units: Number 10 cans, 6 cans per case

Style: Slices

Grade: U.S. Grade C

Packing Medium: Light Sirup

Net Weight: 107 ounces

Drained Weight: 61.5 ounces, minimum

Pineapple slices should have fairly good color (may be dull or variable but typical of properly matured pineapple). It should be fairly uniform in size and shape and fairly free of defects such as brown spots, eyes, and bruises. Pineapples should be of fairly uniform ripeness and fairly free of porosity. Sliced pineapple should contain not more than 1.1 ounces of core per pound of drained fruit. It should have fairly good flavor and odor.

Half slices are the semi-circular halves of slices.

Broken slices are arc-shaped portions, cut or broken, and variable in size and shape.

Watch For: Off-color, excess of light-colored units, or white markings. Units excessively blemished with deep fruit eyes, brown spots, bruises, or peel.

Federal Specification Number: Z–F–1742/23

Pineapple, Chunks, Tidbits

Purchase Units: Number 10 cans, 6 cans per case

Style: Chunks, Tidbits

Grade: U.S. Grade B (Choice)

Packing Medium: Heavy Sirup

Net Weight: 108 ounces

Drained Weight: 65.75 ounces

Pineapple should have reasonably good color. It may have slightly dull color, but should be characteristic of properly matured pineapple of similar varieties. Color may vary between units and have white radiating streaks present, but such variations should not seriously affect the appearance. It should be reasonably uniform in size, and reasonably free from defects (brown spots, eyes, and bruises), and have a reasonably uniform ripeness, and be fairly free of porosity. There should be not more than 1.1 ounces of core per pound of drained fruit. Pineapple should have good flavor and odor.

Watch For: Off-color, excess of light-colored units, or white markings. Units excessively blemished with deep eyes, brown spots, bruises, or peel.

Federal Specification Number: Z–F–1742/23

Pineapple, Crushed

Purchase Units: Number 10 cans, 6 cans per case

Style: Crushed

Grade: U.S. Grade B (Choice)

Packing Medium: Solid Pack in Juice

Net Weight: 109 ounces

Drained Weight: Not less than 78 percent by weight of contents, minimum

Crushed pineapple should have color as for tidbits and be reasonably free of defects, blemished or seriously blemished fragments including specks that affect appearance. It should have reasonably uniform ripeness and be fairly free of porosity. There should be not more than 1.1 ounces of core per pound of drained fruit. It should have good flavor and odor.

Watch For: Off-color, excess of light-colored units, or white markings. Presence of eyes, pieces of core, and brown spots.

Federal Specification Number: Z–F–1742/23

Plums

Purchase Units: Number 10 cans, 6 cans per case

Type: Purple or Italian Prune

Grade: U.S. Grade B (Choice)

Count: 90 or less

Packing Medium: Heavy Sirup

Net Weight: 108 ounces

Drained Weight: 60 ounces

Canned plums should have a reasonably uniform bright color (exposed flesh may be fairly well colored) and a reasonably clear, high colored liquid. Plums should be reasonably uniform in size and reasonably free from defects such as stems, leaves, loose pits, damaged units, and crushed or broken units. They should have reasonably good character and good flavor and odor.

Watch For: Off-color or brown color. Fruit excessively crushed or broken. Soft or tough, shriveled plums. Noticeable number of loose skins, gum pockets identified by surface scab or blemishes.

Federal Specification Number: Z–F–1742/24

Prunes, Dry Canned

Purchase Units: Number 10 cans, 6 cans per case

Type: Sweet, Tart

Pack: Regular, Heavy

Grade: U.S. Grade A

Packing Medium: Heavy Sirup

Net Weight:
Regular Pack, 108 ounces
Heavy Pack, 112 ounces

Drained Weight:
Regular pack, 70 ounces, minimum
Heavy pack, 110 ounces, minimum

Prunes should be uniform, typical black, blue-black, or reddish-brown color and practically uniform in size. Prunes should be practically free of defects and have good, tender, fleshy texture.

Watch For: Excessive number of prunes with thick scab, leathery areas on the skin, or tough skin. Noticeable size variation and dull chocolate-brown color, as well as shriveled prunes that fail to rehydrate.

Federal Specification Number: Z–F–1742/25

Asparagus, All-green

Purchase Units:
2- or 2½-pound packages, 12 per case

Style: Spears, Cuts and Tips

Size: Spears only, medium or large, 5-inch cut

Grade: U.S. Grade A (Fancy)

Asparagus should have good typical green color and reasonable size uniformity. There should be practically no defects such as shattered heads, poorly cut or ragged units, or damaged units. Asparagus should have tender texture, good flavor, and no undersirable flavors or odors.

Watch For: Tough fiberous units, shattered, open, or flowered heads. Off-color, stringy, or frayed cut edges. Presence of considerable grit, silt, or sand. Too few heads (in cuts and tips style). Off-flavor or odor.

Federal Specification Number: HHH–V–1745/1

Beans, Green or Wax

Purchase Units: 2½-pound packages, 12 per case

Style: Cut

Grade: U.S. Grade B

Beans should have similar varietal characteristics with reasonably good, bright, typical color. They should be reasonably free from defects such as extraneous vegetable material, loose seeds and pieces of seed, unstemmed units, detached stems, damaged or blemished units. Beans should be reasonably tender, not materially affected by sloughing, reasonably fleshy, and reasonably free of tough strings.

Watch For: Off-color or mixed varieties. Presence of loose stems, unstemmed units, or small pieces. Presence of damaged, or blemished units, tough stringy units, and excess sloughing. Off-odor or flavor.

Federal Specification Number: HHH–V–1745/2

Beans, Lima

Purchase Units: 2½-pound packages, 12 per case

Type: Thick Seeded (Fordhook) or Thin Seeded (Baby)

Grade: U.S. Grade B

Lima beans should have reasonably good color typical of the type and be reasonably free from defects such as extraneous vegetable material, broken beans, loose skins, shriveled or sprouted beans, or blemished or dirty beans. They should have normal flavor and odor and similar varietal characteristics.

Watch For: Off-color or excessive number of white beans. Extraneous material, broken beans, loose skins, or blemished beans. Off-flavor and odor.

Federal Specification Number: HHH–V–1745/3

Blackeye Peas

Purchase Units: 2½-pound packages, 12 per case

Grade: U.S. Grade B

Blackeye peas should have reasonably good color, typical of the type, and be reasonably free from defects such as extraneous vegetable material, broken peas, loose skins, shriveled or sprouted peas, or blemished or dirty peas. Should have normal flavor and odor and similar varietal characteristics.

Watch For: Off-color or excessive number of white peas. Extraneous material, broken peas, loose skins, or blemished peas. Off-flavor and odor.

Federal Specification Number: HHH–V–1745/13

Broccoli

Purchase Units:
2- or 2½-pound packages, 12 per case

Style: Spears

Grade: U.S. Grade B

Broccoli should have reasonably good color (may be variable but not off-color) and be reasonably free from defects such as discoloration, hollow or pithy centers, excessive trimming, loose leaves or pieces, or damaged units. It should be reasonably well developed. Bud clusters may be slightly enlarged, but practically none should be in the flowered or open stages. Bud stem may be slightly elongated. Units should be reasonably tender and free of fiber with normal flavor and odor.

Watch For: Dull, off-color units. Presence of grit or silt, or extraneous material. Defective units, excessively trimmed units, or blemished units. Presence of flowering units or units with excessive fiber. Off-flavor or odor.

Federal Specification Number: HHH–V–1745/4

Broccoli

Purchase Units: 2½-pound packages, 12 per case

Style: Cuts, Chopped

Grade: U.S. Grade A

Broccoli should have good, bright characteristic green color typical of young tender broccoli. Units should be at least fairly uniform in size for the style and practically free from defects, extraneous material, grit or silt, or damaged units. Units should be tender and free from tough fiber and the buds at least reasonably well-developed with normal flavor and odor.

Watch For: Dull, off-color units. Presence of grit or silt, or extraneous material. Defective units, excessively trimmed units, or blemished units. Presence of flowering units or units with excessive fiber. Off-flavor or color.

Federal Specification Number: HHH–V–1745/4

Brussels Sprouts

Purchase Units:
2½-pound packages, (count 50–80 units), 12 per case

Grade: U.S. Grade B

Brussels Sprouts should have reasonably good color (may possess up to 25 percent yellow units with the remainder yellow-green). They should be reasonably free from defects such as poorly trimmed units, damaged units, grit or silt, loose leaves or small pieces. Units should be reasonably well-developed, reasonably well-formed, reasonably compact, and fairly firm with normal flavor and odor.

Watch For: Off-color units. Presence of excessive grit or silt, loose leaves, small pieces, poorly trimmed or damaged units. Units that are soft or very loose structured. Off-flavor or odor.

Federal Specification Number: HHH–V–1745/5

Carrots

Purchase Units: 2½-pound packages, 12 per case

Style: Diced, Sliced

Grade: U.S. Grade B

Carrots should have reasonably good orange color which may be slightly dull but not off-color. Green units that do not affect the appearance may be present. Units should be reasonably uniform in size and reasonably free from defects such as crushed, broken, or unpeeled, or blemished units. They should be reasonably tender (may vary in texture), and have normal flavor and odor.

Watch For: Excessive green or off-color. Excessive number of broken, crushed, cracked or unpeeled or tough, fibrous or mushy units. Off-flavor or odor.

Federal Specification Number: HHH–V–1745/6

Cauliflower

Purchase Units:
2- or 2½-pound packages, 12 per case

Grade: U.S. Grade A (Fancy)

Cauliflower should have clusters with good white to light cream color, that are practically free of defects such as small pieces, detached fragments, poorly trimmed, or damaged units. It should have good firm compact clusters with good flavor and odor.

Special Note: Fancy quality cauliflower may have some dark colored units in the frozen state that disappear on cooking.

Watch For: Off-color or more than a slight tint of green, blue, or purple on stalks. Excessive amounts of small pieces and detached fragments, excessive number of damaged units or loose, soft, ricey, or fuzzy units. Off-flavors or odors.

Federal Specification Number: HHH–V–1745/7

Corn

Purchase Units: 2½-pound packages, 12 per case

Style: Whole Kernel

Type: White or Golden (yellow)

Grade: U.S. Grade B

Corn should have reasonably uniform color that is reasonably bright and free from "off-variety" kernels. It should be reasonably free from defects such as pieces of cob, silk, husk, or other extraneous vegetable material, pulled or ragged or crushed kernels, loose skins, or damaged kernels. Kernels should be reasonably tender in texture and in the "cream" stage of maturity. Corn should have normal flavor and odor, and similar varietal characteristics.

Watch For: Dull color, off-color. Excessive crushed, broken, or ragged kernels, pieces of cob, silk, or husk. Damaged or seriously damaged kernels, tough kernels, and off-flavor or odors.

Federal Specification Number: HHH–V–1745/8

Greens, Leafy

Purchase Units: 3-pound packages, 12 per case

Style: Whole Leaf, Sliced, Cut (or chopped)

Type: Collards, Kale, Mustard, Turnip

Grade: U.S. Grade B

Greens should have reasonably uniform characteristic color and be reasonably free from defects such as grit, sand, silt, seed stems, roots, weeds, grass, and damage by yellow or brown or other discoloration. They should be reasonably tender with the appearance and eating quality not affected by coarse or tough leaves or stems. They should have similar varietal chracteristics and be of normal flavor and odor.

Watch For: Off-color. Presence of silt, sand, grit, weeds, grass, discoloration, tough or coarse stems, or leaves. Off-flavor or odor.

Federal Specification Number: HHH–V–1745/9

Okra

Purchase Units: 3-pound packages, 12 per case

Style: Cut, Whole

Grade: U.S. Grade A

Okra should have good, uniform color that is typical of the variety. It should be practically free of defects such as blemishes, inedible stems, or collapsed pods. It should have good character, similar varietal characteristics, and normal "gumboish" flavor and odor.

Watch For: Dull, off-color pods. Excessive defects such as blemishes, inedible stems, or collapsed pods.

Federal Specification Number: HHH–V–1745/10

Peas and Carrots

Purchase Units: 2½-pound packages, 12 per case

Grade: U.S. Grade A

Product should contain not less than 50 percent by weight of peas. Product should be not less than 25 percent by weight of diced carrots.

Peas should be fairly uniform with green color typical of the variety. They should not be seriously affected by marked variation in color and should be reasonably free from defects such as extraneous vegetable matter, broken peas, detached skins, or blemished peas. Peas should be reasonably tender after cooking and have normal flavor and odor and similar varietal characteristics.

Carrots should have reasonably good orange color which may be slightly dull but not off-color. Green units which may be present should not materially affect the appearance. Units should be reasonably uniform in size and free from defects such as crushed, broken, or unpeeled or blemished units. Carrots should be reasonably tender (may vary in texture) and have normal flavor and odor.

Watch For: Dull, off color peas. Extraneous material, broken peas, loose skins, or blemished peas. Off-flavor or odor in peas.

Excessive green or off-color carrots. Excessive number of broken, crushed, cracked, unpeeled or tough fibrous, or mushy units. Off-flavor or odor in carrots.

Federal Specification Number: HHH–V–1745/12

Peas, Green

Purchase Units:
2½-pound packages, 12 per case
20-pound package

Grade: U.S. Grade B

Peas should be fairly uniform with green color typical of the variety. They should not seriously be affected by marked variation in color and should be reasonably free from defects such as extraneous vegetable matter, broken peas, detached skins, or blemished peas. Peas should be reasonably tender after cooking and have normal flavor and odor and similar varietal characteristics.

Watch For: Dull, off-color peas. Extraneous material, broken peas, loose skins, or blemished peas. Off-flavor or odor.

Federal Specification Number: HHH–V–1745/14

Peppers, Sweet

Purchase Units: 2 1/2-pound packages, 12 per case

Style: Diced

Type: Type I Green, Type II Red, Type III Mixed Red and Green

Grade: U.S. Grade A

Peppers should have good characteristic color typical of the type. Units should be practically uniform in size and practically free of defects such as seeds, core or stem materials, damaged units, and grit, sand or silt. Flesn should be firm, full, and tender.

Watch For: Off-color, bronzing, poorly cut units, seeds, cores, and stems.

Federal Specification Number: HHH–V–1745/15

Potatoes, White, French Fried

Purchase Units:
Poly bag, 1- or 5-pound bag
Case, 30 pounds of 6 5-pound packages

Style: Crinkle Cut, Straight Cut

Type: French Fries, Regular

Size: 3/8-inch diameter, 3 inches long

Grade: U.S. Grade A

Potatoes should have good flavor, good color, and be practically uniform size and symmetry. They should be practically free of defects such as crushed units, discolored eyes, callous areas, or discolorations that affect appearance or edibility. Potatoes should have a good texture with normal flavor and odor.

Watch For: Excessive light or dark colored units. Excessive number of chips, slivers, or irregular sized pieces. Carbon specks, dark discolorations, excessive oiliness or sogginess after heating. Off-flavor or odor.

Federal Specification Number: HHH–V–1745/16

Potatoes, White, French Fried

Purchase Units:
Poly bag, 1- or 4 1/2-pound bag
Case, 27 pounds of 6 5-pound packages, (approx. weight)

Style: Crinkle Cut, Straight Cut

Type: French Fries, Shoestring

Size: 1/8-inch diameter, 3 inches long

Grade: U.S. Grade A

See selection factors for frozen potatoes, white, french fries, regular.

Potatoes, White, French Fried

Purchase Units:
Poly bag, 1- or 5-pound bag
Case, 30 pounds

Style: Crinkle Cut, Straight Cut

Type: French Fries, Thin

Size: 1/4-inch diameter, 3 inches long

Grade: U.S. Grade A

See selection factors for frozen potatoes, white, french fries, regular.

Potatoes, White

Purchase Units:
Poly bag, 1- or 5-pound bag
Case, 30 pounds

Style: Diced

Type: Hash Browns

See selection factors for frozen potatoes, white, french fries, regular.

Potatoes, White

Purchase Units:
Pound package
Case, 15 or 18 pounds

Style: Shredded

Type: Ready portioned (3 ounces raw)

See selection factors for frozen potatoes, white, french fries, regular.

Potatoes, White

Purchase Units: Package, 1, 5, or 30 pounds

Style: Potato Round

Type: Rissole

See selection factors for frozen potatoes, white, french fries, regular.

Spinach

Purchase Units: 3-pound packages, 12 per case

Style: Whole, Leaf, Chopped

Grade: U.S. Grade B

Greens should have reasonably uniform characteristic color and be reasonably free from defects such as grit, sand, silt, seed stems, roots, weeds, grass, and damage by yellow or brown or other discoloration. They should be reasonably tender with the appearance and eating quality not affected by coarse or tough leaves or stems. They should have similar varietal characteristics and be of normal flavor and odor.

Watch For: Off-color. Presence of silt, sand, grit, weeds, grass, discoloration, tough or coarse stems, or leaves. Off-flavor or odor.

Federal Specification Number: HHH–V–1745/18

Squash, Summer

Purchase Units:
2½- or 3-pound packages, 12 per case

Type: Yellow, Zucchini, White

Grade: U.S. Grade A

Squash should have similar varietal characteristics, and good color, typical of the variety. It should be practically free of defects such as discolored units, scars, broken, or mashed units and poorly cut units. It should have tender and fleshy texture and seeds at an immature stage.

Watch For: Mixed varieties. Off color and broken or mashed units.

Federal Specification Number: HHH–V–1745/19

Squash, Winter

Purchase Units:
2½- or 3-pound packages, 12 per case

Style: Mashed

Type: Hubbard, Butternut, Acorn

Grade: U.S. Grade A

Squash should have good consistency with very little separation of free liquor and uniform bright color that is free of discoloration due to oxidation. It should have a good granular texture that is free of lumps and hard particles and be practically free of defects.

Watch For: Oxidized or off-color squash, hard particles, lumps, and pieces of rind.

Federal Specification Number: HHH–V–1745/19

Succotash

Purchase Units: 2½-pound packages, 12 per case

Grade: U.S. Grade A

See selection factors for frozen corn, lima beans, green beans, or other component vegetables.

Federal Specification Number: HHH–V–1745/20

Vegetables, Mixed

Purchase Units:
2½-pound packages, 12 per case
20-pound package

Type: 4 or 5 Vegetable Mix

Basic Mix:
1. Beans, Wax or Green, cut
2. Beans, Lima
3. Carrots, diced
4. Corn, Golden (or yellow) whole kernel
5. Peas, Early or Sweet

All vegetables individually should have good color for the type and variety used. They should be practically free from defects typical of the basic vegetables. Prior to cooking they should individually possess good texture and tenderness for the basic vegetable and after cooking be collectively tender.

Watch For: See basic vegetables as listed.

Federal Specification Number: HHH–V–200

Apple Slices

Purchase Units:
30-pound can
2½-pound packages, 12 per case

Type:
With Sugar or Without Sugar
Unblanched or Steam Blanched

Grade: U.S. Grade A

Apple slices should have similar varietal characteristics, good color, flavor, and odor. They should be practically free of defects with good character.

Watch For: Hardness or softness. Excessive brown, gray, or pink color. Inedible tissue, excessive skin, bruises, or other defects.

Federal Specification Number: Z–F–1743/1

Berries

Blackberries
Blueberries

Purchase Units: 6½- or 30-pound can

Type: With Sugar (Four parts fruit to one part sugar) or Without Sugar

Grade: U.S. Grade A

They should be whole, firm berries, with reasonably good color. They should be reasonably free of defects and have reasonably good character.

Watch For: Presence of leaves, large stems, cap stems, or undeveloped berries. Crushed, mushy, or soft berries. Grit or sand.

Federal Specification Number: Z-F-1743/2

Cherries, Red Tart

Purchase Units: 30-pound can

Style: Pitted

Type: Dry Sugared (Four parts fruit to one part sugar)

Grade: U.S. Grade A

Cherries should have a good red color with practically no pits. They should contain practically no defects such as extraneous vegetable material, mutilated cherries, scab, hail injury, discolorations, or scar tissue. They should have a firm, fleshy texture, and normal flavor.

Watch For: Poor, pale color, or the presence of pits or pit fragments, scab blemishes, hail injury, discolored areas, or scar tissue. Thin flesh, leathery, tough, or soft texture or off-flavor.

Federal Specification Number: Z-F-1743/3

Juices, Fruit

Grape Juice, Concentrated

Purchase Units: Can, 32-, 12-, or 6-fluid ounce can

Style: Sweetened

Type: Concord Juice, or Mixed Concord with Other Grape Juices.

Grade: U.S. Grade A

Grape juice should have good flavor and odor typical of the type. It should be free from defects such as sediment and other residues, tartrate crystals, and seed particles.

Watch For: Tartrate crystals, skins and pulp, scorched or carmelized flavor.

Federal Specification Number: Z-F-1743/5

Juices, Fruit

Grapefruit Juice, Concentrated

Purchase Units: Can, 32-, 12-, or 6-fluid ounce can

Style: Sweetened or Unsweetened

Grade: U.S. Grade A

Grapefruit juice should have good flavor and odor and bright, good color. It should be practically free of defects.

Watch For: Off-color, tan or gray color. Excessive amounts of pulp and small seed particles.

Federal Specification Number: Z-F-1743/6

Juices, Fruit

Orange and Grapefruit Juice, Concentrated

Purchase Units: Can, 32-, 12-, or 6-fluid ounce can

Style: Sweetened or Unsweetened

Grade: U.S. Grade A

See selection factors for component fruit juices.

Watch For: Off color. Excessive amount of pulp and seeds.

Federal Specification Number: Z-F-1743/7

Juices, Fruit

Orange Juice, Concentrated

Purchase Units: Can, 32-, 12-, 6-fluid ounce can

Style: Unsweetened

Grade: U.S. Grade A

Concentrate should have a Brix of not less than 41.8°. When diluted according to label directions, juice has a Brix of not less than 11.8°. Reconstituted properly, the reconstituted juice has a very good color and flavor and practically no defects.

Watch For: Low Brix. Off color and flavor. Seeds, peel, or excessive pulp.

Federal Specification Number: Z-F-1743/9

Peaches

Purchase Units: 6½-, 10-, or 30-pound can

Style: Sliced

Type: Dry Sugared (Four parts fruit to one part sugar) Yellow Freestone

Grade: U.S. Grade B

Peaches should be reasonably uniform with bright color typical of reasonably well-matured fruit. They may possess a slight variation in color with not more than very slight brown color resulting from oxidation. They should be reasonably uniform in size and symmetry and reasonably free of misshapen units. They should be reasonably free from defects such as extraneous material, peel, pits, pieces of pits, damaged or blemished units. They should have reasonably uniform tender texture, not excessively mushy or soft, with normal flavor and odor and similar varietal character characteristics.

Watch For: Variable color, off-color, dull color, or excessive brown oxidation. Presence of misshapen units, pits, stem, peel, scab or insect injury. Hard, rubbery, or soft, mushy texture. Excessively frayed units or off-flavor or odor.

Federal Specification Number: Z–F–1743/11

Raspberries

Purchase Units: 6½- or 30-pound can

Type: With Sugar (Four parts fruit to one part sugar)

Grade: U.S. Grade A

They should be whole, firm berries with reasonably good color. They should be reasonably free of defects and have reasonably good character.

Watch For: Presence of leaves, large stems, cap stems, or underdeveloped berries. Crushed, mushy, or soft berries. Grit or sand.

Federal Specification Number: Z–F–1743/2

Rhubarb

Purchase Units: 25-pound can

Type: Crimson or Green with Sugar Added

Grade: U.S. Grade B

Rhubarb should have the glossy appearance and color that is typical of the variety. It may be slightly dull or gray but not off-color. It should be reasonably free from defects such as extraneous vegetable material, root ends, leaf ends, ragged or irregular units, blemished or scarred units, growth cracks, or damaged units. It should be reasonably tender and free from tough or spongy units. It should have normal flavor and odor.

Watch For: Dull, gray, off-color pieces. Presence of extraneous vegetable material, root ends, leaf ends, blemished or scarred units, damaged units, or tough or spongy units. Off-flavor or odor.

Federal Specification Number: HHH–V–1745/17

Strawberries

Purchase Units: 6½-, 10-, or 30-pound can

Style: Sliced

Type: Dry Sugared (Four parts fruit to one part sugar)

Grade: U.S. Grade B

Strawberries should have reasonably good color. The mass should have a fairly uniform characteristic pink to red color that is not materially affected by dull, gray, or reddish-brown cast. They should be reasonably free from defects such as grit, sand or silt, extraneous material, caps or portions of caps, sepal like bracts or portions, stems, short stems, or damaged strawberries. They should have a fairly firm texture not seriously affected by seediness or disintegration, be reasonably free of mushy berries, and have similar varietal characteristics with normal flavor and odor.

Watch For: Dull gray, reddish-brown, or white color. Presence of grit, sand, weeds, grass, seedy units, insect damage, stems, caps, sepal bracts, or mushy berries. Off-flavors or odors.

Federal Specification Number: Z–F–1743/2

Potatoes, Dehydrated Low Moisture

Purchase Units: Number 10 cans, 6 cans per case

Style: Flakes, Granules, Sliced, Diced

Grade: No Established U.S. Grade Standard

Net Weight:
Granules, 6 pounds 2 ounces
Flakes, 2 pounds 8 ounces
Slices, 1 pound 4 ounces

Dehydrated potatoes should have a bright, uniform white color which may range from light cream to pale yellow. Potatoes should be free of haylike, scorched, rancid, or musty odors; and be practically free of defects such as peel, bruises, eyes, scorched particles, and foreign material.

Watch For: Dull color, off odors, peel, eyes, bruised areas, and foreign material which are signs of improper rehydration.

Note: Always follow label directions for rehydrating the product.

Federal Specification Number: JJJ–P–630

Sweetpotatoes, Dehydrated Low Moisture

Purchase Units: Number 10 cans, 6 cans per case

Style: Flakes

Grade: No Established U.S. Grade Standard

Net Weight: 56 ounces

Dehydrated sweetpotatoes should have a reasonably uniform, bright yellow or golden color; good, typical flavor and odor. A smooth, lumpfree texture that is not grainy, fibrous, or gummy after rehydration is desirable.

Watch For: Off-color, odor, and flavor; evidence of heat damage, peel or bruises.

Note: Always follow label directions for rehydrating the product.

Federal Specification Number: None

Apples and Applesauce

Purchase Units: Pound

Style: Pie Pieces, Flakes, Wedges, or Sauce Pieces

Grade: U.S. Grade A

Dehydrated apples and applesauce should have similar varietal characteristics and good flavor and odor. They should have bright color, be free of defects, and have good texture.

Watch For: Variable or dark color. Presence of small pieces, loose core material, stems or calyxes, hard or dry units, and sulfur dioxide in excess of 500 PPM.

Federal Specification Number: None

Apricots

Purchase Units: Pound

Style: Nugget-type, Pieces, Diced, and Slices

Grade: U.S. Grade A

Dehydrated apricots should have good flavor, odor, and color. They should be reasonably uniform in size and practically free of defects with good texture.

Watch For: Dark or oxidation discoloration. Dull orange to amber color.

Federal Specification Number: None

Dates

Purchase Units: Pound

Style: Whole or Pitted

Type: Regular or Low Moisture

Grade: U.S. Grade A

Dates should have similar varietal characteristics. They should be practically uniform light or dark amber color and be practically uniform in size, and free from defects. They should be well-developed, fleshy, and soft

Watch For: Variable size and color, and presence of dirt, deformed units, puffiness, and sunburn.

Federal Specification Number: Y–D–126.

Peaches

Purchase Units: Pound

Style: Nugget-type, Pieces, Diced or Slices

Grade: U.S. Grade A

Dehydrated peaches should have good flavor, odor, and color. They should be reasonably uniform in size, practically free from defects, and have a good texture.

Watch For: Dark or oxidation discoloration. Dull orange to amber color.

Federal Specification Number: None

Prunes, Dried

Purchase Units: 30-pound box

Style: Whole, Unpitted, or Whole, Pitted

Type: French, Italian, Imperial, or Sugar

Dried prunes should have a fairly uniform size, characteristic color, good texture, and be free from defects.

Watch For: Mixed varieties (unless requested), mixed sizes, variable texture and color, and defects such as scars, scabs, cracked or split units. Excessively moist units.

Federal Specification Number: Z–R–681

Raisins, Processed

Purchase Units: 30-pound box

Type: Thompson Seedless, Natural

Grade: U.S. Grade A

Size: Small

Raisins should have similar varietal characteristics, good typical color, good flavor, and development.

Watch For: Grit, sand, or silt. Fermented or sugared raisins and undeveloped raisins.

Federal Specification Number: Z–R–71.

General Information on Other Foods

The information in this section is intended as a guide for school food service buyers in purchasing butter or margarine, fats and oils, gelatin, mayonnaise and salad dressings, grain products, spices and herbs, vinegar, and various other ingredients used in food preparation. For many of these products, Government standards exist to protect and guide the purchaser. Knowledge of these standards and of the different types of products, their ingredients, and their comparative costs is part of the information the food purchaser must have to hold down costs without sacrificing quality or nutritional value.

A number of the products included in this section may be identified as specific menu items such as enriched macaroni and noodles, ice cream, etc. Those are not part of the meal pattern requirements but should be used frequently to complete breakfasts and lunches, help improve acceptability, and provide additional food energy and other nutrients.

Catsup, Tomato

Purchase Units:
14-ounce bottles, 24 per case
Number 10 cans, 6 cans per case

Grade: U.S. Grade A

Net Weight: 115 ounces per No. 10 can

Catsup should have a good red ripe tomato color and good consistency with only slight separation of free liquid. It should be practically free of specks, particles of seeds, and have a clean aromatic odor.

Watch For: Dark brown discoloration around neck of bottles. Black specks, lack of spicing, or over spicing. Sour, scorched, or bitter flavor and noticeable pale yellow color.

Federal Specification Number: JJJ–V–1746/25

Chili Sauce

Purchase Units:
14-ounce bottles, 24 per case
Number 10 cans, 6 cans per case

Grade: U.S. Grade A

Net Weight: 105 ounces per No. 10 can

Chili sauce should have good red ripe tomato color and good consistency with only slight separation of free liquid. Grain should be coarser than catsup and seeds and skin may be present in finished product.

Watch For: Dark brown discoloration around neck of bottles. Black specks, lack of spicing, or over spicing. Sour, scorched or bitter flavor and noticeable pale yellow color.

Federal Specification Number: JJJ–V–1746/26

Mustard, Prepared

Purchase Units: Gallon jars, 4 jars per case

When purchasing prepared mustard it is wise to obtain and compare samples for color, consistency, and flavor before determining the brand to be purchased.

Federal Specification Number: EE–M–821

Vinegar

Purchase Units: Gallon jars, 4 gallons per case

Vinegar is produced by the action of acetic acid bacteria on dilute solutions of ethyl alcohol derived by fermentation from various sugary and starchy foods, such as cull apples, grapes, peaches, and sweetpotatoes. Federal law requires that vinegar have a minimum acid content of 4 percent or be a "40 grain" vinegar. A "50 grain" vinegar has a 5 percent acidity.

A good cider vinegar has a strength of 50–60 grains. Flavor and odor are determined by the materials used in the manufacturing. Good vinegar should be free from sediment and aged from 6 months to 1 year. Aging eliminates off-flavors and develops bouquet.

Macaroni and Macaroni Products Including Spaghetti and Vermicelli

Purchase Units:
10-, 15-, 20- and 40-pound cartons and some types are available in 100-pound bags

Ingredients: Macaroni products are prepared by drying formed units of dough made from semolina, durum flour, farina, flour, or any combination of two or more of these with water. Optional ingredients may include egg whites; seasonings such as onions, garlic, etc; salt; gum gluten; and selected acceptable chemical compounds.

The following are types of the more common macaroni products:

Types	Name	Diameter
Solid round rods	Vermicelli	not more than 0.06 inches
	Spaghetti	0.06 to 0.11 inches
Hollow tubes, plain	Macaroni Zitoni	0.11 to 0.27 inches
Hollow tubes, corrugated	Zitoni rigati	
Sheets, scalloped	Lasagne (the widest)	
Elbows, hollow, small, and smooth	Tuchetti	

Purchase the type and shape of macaroni product that best fits the menu item for which it is intended. Buy enriched macaroni products.

Each pound of finished product must contain the following nutrients to be labeled enriched macaroni:

Minimum	Maximum	Nutrient
4 mg	5 mg	thiamin
1.7 mg	2.2 mg	riboflavin
27 mg	34 mg	niacin
13 mg	16.5 mg	iron

Federal Standards of Identity: Code of Federal Regulations, 21, Food and Drugs, Parts: 16.1, 16.2, 16.3, 16.4, 16.9, 16.13, 16.14, and 16.15

Noodles and Noodle Products

Purchase Units:
10-, 15-, 20-, and 40-pound cartons.

Ingredients: Noodle products are prepared by dry formed units of dough made from semolina, durum flour, farina, flour, or any combination of two or more of these with liquid eggs, frozen eggs, dried eggs, egg yolks, frozen yolks, dried yolks, or any combination of two or more of these with or without water. The egg level minimum is 5.5 percent. Optional ingredients may include seasonings such as onions, garlic, etc.; salt; gum gluten; and selected acceptable chemical compounds.

Type: *Flat Ribbons*

Name	Size
Broad	1/4 inch wide
Medium	1/8 inch wide
Fine	1/16 inch wide

Buy enriched noodle products.

Each pound of the finished product must contain the following nutrients to be labeled enriched noodles.

Minimum	Maximum	Nutrient
4 mg	5 mg	thiamin
1.7 mg	2.2 mg	riboflavin
27 mg	34 mg	niacin
13 mg	16.5 mg	iron

Federal Standards of Identity: Code of Federal Regulations, 21, Food and Drugs, Parts: 16.6, 16.7, 16.10

Butter

Purchase Units:
Pound: Chips, Patties or Reddies, 48 to 96 per pound in 5-pound containers.
Cubes: 68 pounds per container

Butter shall contain at least 80 percent milk fat.

Description: Butter manufacture is carefully controlled in creameries. USDA has recommended that States adopt manufacturing grade milk requirements that cover milk production and handling practices. Cream used for butter must be pasteurized. An act of Congress requires butter to contain not less than 80 percent milk fat; it may or may not contain added salt or coloring matter. If coloring matter is added, it is not necessary to note this on the label. After the product is churned, it may be washed, salted, and worked. Working is very important to the quality to give a waxy, compact body. Overworking will give a weak body. Today, most of the butter is made by the continuous automatic churn which gives a uniform product with improved body and texture. Federal standards for butter are U.S. Grade AA, U.S. Grade A, and U.S. Grade B. The U.S. Grade is established on the basis of flavor, body, salt, and color. Determination of body characteristics includes texture. It should not show evidence of leakiness, stickiness, and shortness; streaked or mottled color; or gritty salt. The butter should have a sweet, pleasing flavor and a smooth, compact body with no visible moisture. The color should be even and not mottled, wavy or streaked. The package should be clean, dry, and sound, and should properly protect the butter.

Recommended Points for Specifications:
USDA graded butter (U.S. Grade AA or A)

Color level

Butter with 96 chips per pound, if buying individual servings.

Cream

Purchase Units:
1/2-pint, pint, quart, 1/2-gallon, and gallon

Description: Cream is the milk fat which is separated from milk. It is pasteurized and may be homogenized.

Types:
Half and Half is a mixture of milk and cream and contains not less than 10.5 percent milk fat and less than 18.0 percent milk fat.

Light cream contains not less than 18 percent but less than 30 percent milk fat.

Light whipping cream contains not less than 30 percent but less than 36 percent milk fat.

Heavy cream contains not less than 36 percent fat.

Buy the type of cream that best suits the menu item for which it is intended.

Federal Standards of Identity: Code of Federal Regulations, 21, Food and Drugs, Parts: 18.30, 18.501, 18.511, 18.515.

Ice Cream, Bulk

Purchase Units:
Bulk ice cream is packaged in 2½-, 3- or 5-gallon single service paper containers.
Packaged ice cream refers to the product in the smaller containers of cups, pint, quart, ½-gallon, and gallon sizes.

Ingredients: Ice cream is prepared by freezing while stirring a pasteurized mix of cream, milk, and other acceptable dairy products, with sweeteners (sugar, sucrose, dextrose, etc.), flavorings (fruits, spices, nuts, etc.), stabilizers, and emulsifiers.

Finished Product: The difference in fat content, flavoring material, and weight per gallon of the ice cream may influence the price of ice cream.

The quality of ice cream is related to composition, quality of ingredients, weight per gallon, and the quantity and quality of flavoring materials. Federal standards for milk fat and solids content of ice cream are a minimum of 10 and 20 percent respectively.

Note: Ice cream sold intrastate shall meet State standards for ice cream.

Recommended Points for Specifications:
Ice cream that meets State, local, and/or Federal specifications.

Fancy ice cream and ice cream novelties are available. Included in this category are such items as ice cream cakes, bricks or ice cream slices, sandwiches, coated and uncoated ice cream on the stick, etc. These items are available in a wide selection of flavors and sizes.

Federal Standards of Identity: Code of Federal Regulations, 21, Food and Drugs, Part: 20.2.

Ice Cream, Soft Serve or Ice Cream Mix

Purchase Units:
The mix is normally packaged in 5- or 10-gallon plastic bags, in cardboard cartons, or metal containers. They are also available in ½- or 1-gallon cartons for the smaller user.

Description: Soft serve or ice cream mix is a basic mix requiring special freezing facilities and trained operators. At the time of freezing, flavorings are added to the mix, or the mix may be purchased flavored.

There is a wide variety of products and flavors to choose from in the frozen dessert industry. Careful attention should be given to the purchase of these products.

Milk, Evaporated

Purchase Units:
14½-ounce cans, 48 cans per case or
No. 10 cans, 6 cans per case

Description: Evaporated milk is obtained by the partial removal of water from milk. The milk fat content is not less than 7.5 percent and the milk solids content is not less than 25.5 percent. Evaporated milk must contain 25 International Units of vitamin D per ounce. It is homogenized and processed by heat to prevent spoilage. The addition of vitamin A and other acceptable ingredients are optional.

Federal Standards of Identity: Code of Federal Regulations, 21, Food and Drugs, Part: 18.520.

Milk, Nonfat Dry

Purchase Units:
4½-, 50-, or 100-pound containers

Description: Nonfat dry milk is the product made by removing water from pasteurized skim milk. It contains not more than 5 percent moisture and not more than 1½ percent milk fat unless otherwise specified.

Grades: There are two U.S. grades, U.S. Extra Grade and U.S. Standard Grade.

Types:
Instant nonfat dry milk is a special process resulting in a much larger particle size which gives it improved solubility and dissolving properties.

Non-instant nonfat dry milk, because of its subjection to high heat treatment before drying, results in a less soluable product.

Specify: USDA graded nonfat dry milk. Purchase U.S. Extra Grade nonfat dry milk.

Fortification: Fortification is optional. If fortified, the product must yield reconstituted fluid milk having 2,000 International Units of vitamin A and 400 International Units of vitamin D per quart.

Federal Standards of Identity: Code of Federal Regulations, 21, Food and Drugs, Parts: 18.540, 18.545.

Fats, Lard

Purchase Units:
Pound
50-pound cube or
50-pound tin

Fats are generally solid and oils are liquid at room temperature. Hard fats may be made from oils through the process of hydrogenation. Oils may be further sub-divided into salad oils and cooking oils. Salad oils have been processed to stay clear in the refrigerator. This process is called "winterizing". Cooking oils have not been so treated and become solid at low temperatures.

Definition: The Federal definition for lard is "fat rendered from fresh, clean, sound, fatty tissues of hogs in good health at the time of slaughter."

Lard may be graded according to the color, texture, and flavor of the product. The color of the lard can be best observed when melted. It should not be cloudy and should have a light, golden color. Smell and taste the lard when it is melted. Lard when chilled should be snow white. The solidified lard should be firm and moderately resistant to pressure of the finger and have no graininess. Lard may have strong flavors resulting from too high a temperature in rendering or too long a rendering period. Rancidity easily develops in lard unless anti-oxidants are added. A good quality lard should contain not more than 1/2 percent free fatty acids.

Types:
Pure leaf lard comes from leaf fat, the fat surrounding the kidney and abdominal walls. It is the highest quality lard. Lard may not be processed from bones, heads, ears and like meats and tissues. If pork fat comes from other sources than fatty tissues, it must be labeled "rendered pork fat," not lard.

Hydrogenated lard has improved quality and a higher melting point. The shortening power of lard and its plasticity make it good for pie crusts. It has a lower smoking temperature than vegetable oils and is seldom used for frying purposes.

Federal Standards of Identity: Code of Federal Regulations, Food and Drugs, 9, Animal and Animal Products, Parts: 319.702, 319.703.

Fats, Shortening

Purchase Units:
Pound
50-pound tin

Definition: Hydrogenated all-vegetable shortening are solidified vegetable oils. These shortenings are made from cottonseed, soybeans, and/or corn oil and are made solid by hydrogenation and plasticizing. Hydrogenated fats have had hydrogen added to the unsaturated carbon bonds on the glycerides during the processing of a natural fat, either animal or vegetable, which improves the texture and firmness or plasticity of the fat, raises the melting point, increases the keeping qualities, and makes the fat odorless and tasteless.

Types:
All purpose Vegetable Shortening for deep-fat frying, pastry, cakes, and for all around food production.

Fat for deep-fat frying with a high stability and a high smoke point (425°F or above).

High-ratio Shortenings for greater shortening power achieved by adding emulsifiers, usually monoglycerides or diglycerides.

Vegetable shortenings should be evaluated for shortening power, frying properties, creaming properties, and flavor.

Purchase the types most suitable for use intended.

Federal Standards of Identity: Code of Federal Regulations, Food and Drugs, 9, Animal and Animal Products, Part: 319.701

Margarine, Fortified

Purchase Units:
Pound: Chips, Patties, Reddies, in 12-, 20-, or 30-pound cases.
50-pound solids.

Description: The standards of identity of the Federal Government state that margarine is a "food, plastic in form, which consists of one or more of the various approved animal or vegetable fats mixed with milk." Vitamin A must be added, and Vitamin D may be added. Salt, flavoring, emulsifying agents, artificial color, and preservatives make up the remaining ingredients. The ingredients that may be added are covered by the standard of identity and must be listed on the package. The product must be labeled margarine or oleomargarine.

Margarine must be 80 percent fat. A number of margarines on the market are blends of animal and vegetable fats. Margarine using animal fat must be manufactured under Government inspection for sanitary processing and for operating under sanitary conditions.

Margarine cannot be graded since there are no grade standards. Margarine may be inspected. Coloring should be a uniform natural straw color. The body and texture should be firm and smooth. Margarine made from coconut oils has a definite break and a lower melting point. The flavor of margarine should be pleasing, clean, sweet, and free from taint or foreign odor. Off-flavors can be detected if the margarine is warmed slightly. Storage of margarine should be the same as for butter.

Margarine or oleomargarine is prepared with edible fats and/or oils, or mixtures of these, whose origin is vegetable or rendered animal carcass fat, any or all of which may have been subjected to an accepted process of physico-chemical modification. The product may contain water and/or milk and/or milk products and/or suitable edible proteins as provided in the Federal Standards of Identity. Fortification of margarine with not less than 15,000 International Units of vitamin A per pound of finished product is mandatory. Optional ingredients include artificial coloring, vitamin D, salt, butter, and permitted chemical substances. Fat in finished product may not be less than 80 percent. Label must indicate whether product is from animal or vegetable origin or both.

Recommended Points for Specifications:
Fortified margarine

Federal Standards of Identity: Code of Federal Regulations, 21, Food and Drugs, Parts: 45, 45.1.

Oils, Vegetable

Purchase Units: 5-gallon cans individually packed or 50-, 100-pound containers.

Description: Most vegetable oils come from seeds; however, there are exceptions such as olive oil. Most vegetable oils are deodorized and clarified. Light, air, and moisture cause rancidity. Most vegetable oils for foods are deodorized, bleached, and clarified, but one or more of these processes may be omitted for specific oils. Vegetable oils may deteriorate by discoloring or developing rancid flavors. Light, air, and moisture contribute to the development of rancidity. Air should be excluded by sealing in airtight containers. Light should also be excluded and high-storage temperatures which assist in the breakdown of fats or oils should be avoided during storage. Oils should be clear and brilliant in appearance at 70° F to 85° F and free from visible sediment. The oils should have a bland flavor and odor and be free from undesirable flavors and odors such as rancid, metallic, musty, etc. The appearance of clouding, when oils are stored in the refrigerator, does not detract from their use. Cloudiness will disappear as the oil approaches room temperature.

Types:
Cottonseed oil is from seed of the cotton plant. The average oil content of the seed is 18 to 25 percent. Conditions of soil, season, fertilizer, and variety will affect the flavor and the quantity of oil in the seed. After hulling and extraction of oil by expellers, the oil is refined, the cottonseed meal is used as animal feed. Good cottonseed oil should be 100 percent oil, slightly amber in color, and of good clarity and odor. A high free fatty acid content indicates an oil of low quality. Dark color indicates low quality and poor refining methods.

Cottonseed oil is used frequently for hydrogenating. The smoking temperature of cottonseed oil is high. Fully refined cotton oil is darker in color than refined soy oil.

Corn oil comes from Indian corn or maize, which contains between 3 and 6½ percent oil. Corn oil is a by-product from the manufacture of glucose and starch or from the manufacture of cornmeal, cornflour, or hominy. Most of the corn oil processed in this country is used for salad and cooking oils. It has a high smoking temperature. It is frequently hydrogenated to make plastic fats for cooking and baking. Refined corn oil has a light amber color. When quite fresh it has a distinctive corn flavor.

Corn oil should stand after manufacture to allow heavy fats to settle and drain off. If this is not done, the corn oil will solidify when cold in salad dressings. This process is called "winterizing". Unwinterized oils may be cloudy at cold temperatures.

Peanut oil is processed from the peanut and contains from 38 to 50 percent oil. The variety of peanut and the conditions of growth, in addition to the processing method, are important for flavor and quality of the oil. Peanut oil is extracted either by hydraulic or expeller process. After refining, the oil has a nutty, pleasing flavor and should be amber in

color, like corn oil. Some peanut oils of good quality may be slightly darker than cottonseed or corn oils. Color will depend upon the peanuts from which extracted.

Soybean oil is extracted from the soybean and is used in greater quantity for margarine manufacture than any other oil or fat. The oil content of the seed varies from 11 to 25 percent, but plants cultivated for oil production usually produce seeds containing 16 to 19 percent oil. The condition of the soil, seasonal and climatic conditions, and processing have a definite effect on the quantity and quality of oil obtained. After crushing, the seeds are cooked and the oil solvent is extracted. The residual soy flake, for the most part, is used as a high protein, animal feed. A small percent is additionally processed into soy flour, textured vegetable protein, etc.

Lemon, Extract

Purchase Units:
Pints or quarts (Specify number of containers and size of containers.)

Lemon extract is made from volatile oils of lemon held in alcohol. The pure flavor should contain not less than 5 percent oil of lemon and not less than 80 percent ethyl alcohol. Natural lemon esters have 90 percent terpenes and 4 to 6 percent each of aldehyde esters and alcohol esters.

Imitation lemon extract is made from a compound called oily terpenic aldehyde which imparts the flavor and aroma of lemon. It is relatively unstable and stabilizers must also be added.

Vanilla, Extract and Flavoring

Purchase Units:
Pints and quarts (Specify number of containers and size of containers.)

Vanilla extract is a solution in aqueous ethyl alcohol of flavorful and odorous principals extracted from vanilla beans. The content of ethyl alcohol is not less than 35 percent by volume.

Federal Standards of Identity: Code of Federal Regulations, 21, Food and Drugs, Part: 22.2

Vanilla flavoring is a solution in aqueous ethyl alcohol of flavorful and odorous principals extracted from vanilla beans. The content of ethyl alcohol is less than 35 percent by volume.

Federal Standards of Identity: Code of Federal Regulations, 21, Food and Drugs, Part: 22.4

Vanilla, Imitation

Purchase Units:
Pints, quart and gallons (Specify number of containers and size of containers.)

Imitation vanilla is an extract made from a compound called vanillin. If vanillin is combined with vanilla extract or flavoring, it must conform to Federal Standards of Identity.

Other Flavorings

Purchase Units:
Pints and quarts (Specify number of containers and size of containers.)

Other pure extracts are mint, clove, cinnamon, spearmint, peppermint, anise, wintergreen, almond, and orange. Usually the ratio of natural oil to solvent is 5 or 8:100. Imitation extracts are also available. Fruit flavorings are on the market.

Flour, Wheat, White Enriched

Purchase Units: Pound

Classification: Wheat may be classified: (a) according to the time of planting; winter wheat is planted in the fall, winters as a grass and is harvested in midsummer; spring wheat is planted in the spring and is harvested later than winter wheat; (b) by its density as hard, semi-hard, or soft; (c) by its use as a flour for breads, pastry, cake, or macaroni; (d) by its color as white, amber, or red wheat; or (e) by its protein strength, as making a strong, moderate, or weak flour. Strength of flour in bread or hard flours refers to a strong gluten that will give strong structural support to a baked product. Strength in a cake or soft wheat flour means that it has the ability to carry high ratios of sugar, fat, and other ingredients in pastry making.

Flour made from soft winter wheat is soft to touch and not grainy like flour from hard or durum wheat. If the soft wheat flour is pressed in the hand, it will hold its shape and not crumble the way hard wheat or durum flour will. Flour made from soft wheat is whiter in color and lacks a creaminess seen in flour from hard wheat or in macaroni products made from the durum wheats. The finest soft wheats are used to make the delicate, low-protein and high-starch flour required for cakes and pastry.

Description: Flour, white flour, wheat flour, plain flour, is the food prepared by grinding and bolting cleaned wheat, other than durum wheat and red durum wheat. To compensate for any natural deficiency of enzymes, malted wheat, malted wheat flour, malted barley flour, or any combination of two or more of these, may be used; but the quantity of

malted barley flour may not be more than 0.75 percent. Harmless preparation of a-amylase may be used. Wheat flour should be milled from cleaned, sound and scoured wheat that is essentially free from smut, ergot, weed seeds, and other foreign materials.

The flour is freed from brancoat and germ as prescribed in the Federal Standards of Identity. It may be bleached using selected acceptable methods and if bleached it is marked on the label. Optional ingredients must be declared on the label.

Types: Consider flour in three general categories:

Hard wheat or bread flour is used in baked yeast-raised products as bread and rolls. This type has higher protein content than soft or all purpose flour and contributes the strong elastic quality of protein needed to raise bread.

Soft wheat flour is low protein, is soft in texture, and is ideal for cake baking.

All-purpose flour has been tailored to serve a dual use. It may be used for bread or cake, but because of its flexibility will not bake the optimum loaf of bread or cake as will the specific hard or soft wheat flour. All-purpose flour may also be used as a thickening agent in sauces and gravies.

Chemical and Physical Requirements of All-Purpose and Bread Flour [1]
(Based on 14.0 percent moisture)

	All-Purpose Flour		Bread Flour	
	Min.	Max.	Min.	Max.
Protein (Nx 5.7), %	9.0	—	11.0	—
Moisture, %	—	13.5	—	13.5
Ash, %	—	0.46	—	0.46
pH	5.4	5.8	—	—
Falling Number	175	350	200	300

Chemical and Physical Requirements of Bakers Soft Wheat Flour[1]
(Based on 14.0 percent moisture)

	Min.	Max
Protein (Nx 5.7) %	—	9.5
Moisture %	—	14.0
Ash %	—	0.43
Viscosity	40	75
Spread Factor	80	100

[1] Requirements based on ASCS/USDA purchased flour previously donated to schools.

Each pound of flour must contain the following nutrients to be labeled "enriched" flour:
2.9 mg—thiamin
1.8 mg—riboflavin
24 mg—niacin
16.5 mg—iron

Note: Always buy enriched flour.

Watch For: Flours that have a gray, dull color which may be of poor quality.

Federal Standards of Identity: Code of Federal Regulations, Food and Drugs, 21, Parts: 15.1, 15.10

Flour, Wheat, Whole Wheat or Graham

Purchase Units: Pound

Description: Whole wheat flour should be milled from cleaned, sound, and normally scoured wheat that is essentially free from smut, ergot, weed seeds, and other foreign material. The proportions of the natural constituents of such wheat other than moisture remain unaltered. The product should have a good, characteristic color; should possess a natural wheat-flour taste and odor; and should be free from rancid, bitter, musty, and other undesirable tastes and odors. Whole wheat flour should be prepared, processed, and packaged under modern sanitary conditions and in accordance with good commercial practice.

Chemical and Physical Requirements of Whole Wheat Flour[1]
(Based on 14.0 percent moisture)

	Min.	Max.
Protein (Nx 5.7), %	11.0	—
Moisture, %	—	13.5
Ash, %	—	1.9
Crude Fiber, %	—	2.8
pH	—	—
Falling Number	—	—
Through U.S. Standard No. 20 woven-wire-cloth sieve, %	97	—

[1] Requirements based on ASCS/USDA purchased flour previously donated to schools.

Federal Standards of Identity: Code of Federal Regulations, Food and Drugs, 21, Part: 15.80.

Herbs and Spices

Purchase Units: Ounce or Pound

Herbs and spices are vegetable substances with pungent qualities peculiar to themselves. Many different parts of plants are represented. Spices are prepared from roots, buds, flowers, fruits, barks, or seeds, whereas herbs come from the leafy or soft portions of certain annual or biennial plants. Every spice or herb depends upon delicate volatile oils for its ability to give off aroma and to impart flavor. In no two spices are these oils exactly the same, even as in nutmeg and mace where the aroma is almost identical. The root, bud, fruit, flower, bark, seed, or leaf is the part of the plant that holds the characteristic ingredient, as the root of ginger, the bud of clove, the fruit or seed of caraway, and the leaf of mint.

Bay Leaves are the dried leaves of the evergreen laurel tree. In drying, the color turns from a shiny green to a yellowish-olive green. The leaves may be 3 inches in length. The flavor is distinctively pungent. Bay leaf is used for meats, stews, soups, sauces, fish, and as a salad flavoring. It may be purchased

whole or cracked (crushed). Use is moderate and a pound goes a long way.

Chili Powder is a blend of spices usually consisting of chili pepper, red pepper, ground cumin seed, ground oregano, and garlic powder, with perhaps ground cloves, ground allspice and powdered onion. Cumin is the predominating flavor. The powder may not always be hot. Different brands will have different flavors. Chili powder is used as a barbecue spice, in Mexican dishes, in flavoring for eggs, omelets, gravies, stews, etc.

Cinnamon is the bark of the Cassia tree. It is dark brown in color, and the flavor is sweet, slightly pungent, milder, but similar to the flavor of cloves. It may be ground into powder for use in baking pies, breads, rolls, cakes, and other pastries. The sticks may be used for flavoring beverages, pickling, and other seasoning purposes.

Cloves are the dried, unopened buds of an evergreen tree grown commercially on the islands of Zanzibar and Madagascar. The flavor is strong, pungent, and sweet. The color should be rich brown. A small quantity gives high flavor; use is small.

Garlic Powder is dehydrated ground garlic and has many commercial uses in flavoring sausages, meats, and other foods. Food services find it economical to use when fresh garlic is hard to obtain or labor is expensive. Garlic salt is salt and garlic powder combined.

Ginger is the root or rhizome of a tropical tuberous plant. The flavor is aromatic, sweet, spicy, and pungent. The color of ground ginger is light buff. Whole dried ginger may be peeled or unpeeled. Ginger is used as a spice in gingerbread, and baked goods, including pies, cookies, cakes, and biscuits. A touch of ginger can give a subtle flavor to meat.

Mustard may come from the seeds of two varieties of plants, the black or brown seed and the white or yellow seed varieties. The former is smaller. Both are small, round pellets. The seed has a hot, sharp, pungent bite, which is slightly sweet. Mustard may be purchased as seeds for use as garnishes for salads, flavoring for pickles, beets, cabbage, or sauerkraut. Ground mustard is used to flavor many meat and fish dishes.

Mace and Nutmeg come from the same plant. Mace is the skin of the seed of the nutmeg tree, a tropical evergreen having a peachlike fruit. The spice, mace, forms a lacy network around the shell in which the nutmeg seed is found. Mace is milder and less pungent than nutmeg. The flavor of nutmeg is sweet, with a warm, spicy undertone. Nutmeg may be purchased whole in balls up to 1 inch in diameter or ground as a coarse salt. Mace and nutmeg are excellent in baked pastries, sweet roll doughs, puddings, sauces, and vegetables. Mace may be used in pound cakes, fish dishes, and meat stuffings. More nutmeg will be used in food facilities than mace.

Onion Powder is made from onions which are dried and ground. It has many uses commercially in food production and in food services. Onion salt is a combination of onion powder and salt.

Oregano is the dried leaves of a plant related to the mint family. Oregano may also be called oreganum, Mexican oregano or sage, or origan. The herb when dried is light green in color. The flavor is strong and aromatic, with an assertive, pleasantly bitter undertone. It is used crushed or ground. It is one of the major spices used in chili powder and finds much use in Mexican and Italian dishes including chili, pizza, and spaghetti sauce.

Paprika is a mild pepper belonging to the Capsicum family. The rich red color and bouquet of the Spanish paprika make it desirable. Paprika has a mild, pleasant, delicately sweet flavor. It is usually ground and used as a garnish or to contribute color to sauces or cooked dishes.

Parsley is the dried leaves of the parsley plant which makes an excellent seasoning. It has extensive use as a delicate flavoring for soups, salads, meat, fish, sauces, and vegetable dishes. It may also be sprinkled over foods as a garnish.

Black and White Pepper come from a climbing vine that produces a small, red berry. When dried, the berry is dark brown. Of all spices it is the one used, perhaps, in greatest quantity. Most imports come from India, Indonesia, and British Malaya. Black pepper is picked before the berry is fully ripe; dried, cleaned, and shipped. Ground black pepper shows both light and dark portions of the berry. White pepper is allowed to ripen fully so that the interior meat separates from the outer shell. This shell is removed and the small white peppercorn is dried. White pepper should have no trace of outer shell in it. It is hotter but somewhat more mild in other flavors than black pepper. Black pepper will have a more penetrating odor and a more pungent taste. White or black peppercorns may be purchased whole or ground.

Red Pepper is redder than cayenne but the flavor is not as hot. It is used largely in ground or crushed form. Crushed red pepper may also be called pepperoni rosso, pizza pepper, coarse crushed red pepper or red pepper, crushed. Because of the small quantity required to give full flavor, quantities used are generally small in most food facilities.

Poultry Seasoning is a ground blend of sage, thyme, marjoram, and savory. Rosemary and other spices may also be added. In addition to flavoring poultry, it may be used in place of sage or marjoram to flavor other foods.

Pumpkin Pie Spice is a blend of ground spices, usually composed of cinnamon, cloves, ginger, and nutmeg or mace. It is used to flavor pies.

Tabasco Sauce is made from tabasco peppers, a type of red pepper.

Nuts

Purchase Units:
1-pound cello bags, 24 bags per carton

Nuts are perishable and easily become rancid or infested with insects. Buyers should specify that purchases come from the current year's crop and be sweet and full-flavored with no trace of rancidity or other objectionable flavors. Quantities for a month's supply only should be purchased if in non-airtight seal. Purchase for the specific use intended. There is little need to purchase expensive whole grades when the items are to be chopped or broken in use.

Federal standards exist for shelled almonds, walnuts, pecans, and peanuts. Standards for in-shell nuts exist for almonds, walnuts, pecans, filberts, Brazil nuts, and peanuts. Because of labor cost, few food facilities purchase in the shell. Some of the most pertinent information on quality of shelled nuts is given below.

Almonds

Types: Shelled almonds. The kernels should be well dried; free from decay, rancidity, insect injury, mold, gum, shriveling, brown spots, or other defects.

Grades:
U.S. Fancy
U.S. Extra No. 1
U.S. No. 1
U.S. Select Sheller Run
U.S. Standard Sheller Run
U.S. No. 1 Whole and Broken
U.S. No. 1 Pieces

Sizes: Specify sizes of whole almonds by number per ounce such as 16–18 (large), 24–26 (medium), 40–50 (small).

Specify sizes of pieces by 20/64-inch diameter for whole or broken and 8/64-inch diameter for pieces.

Pecans

Types: Shelled pecan halves. The kernels should be well cured; free from rancidity, mold, decay, insect injury, shriveling, leanness, hollowness, discoloration, or other damage.

Grades:
U.S. No. 1
U.S. No. 1 Halves and Pieces
U.S. No. 1 Pieces
U.S. Commercial
U.S. Commercial Halves and Pieces
U.S. Commercial Pieces

Sizes: Specify sizes of shelled pecan halves by mammoth (200–250 per pound), junior mammoth (251–300 per pound), jumbo (301–350 per pound), extra large (351–450 per pound), or large (451–550 per pound).

Specify size of pieces by name such as mammoth, extra large, medium, small, midget, and granules.

Peanuts

Types: Shelled peanuts, Virginia, Runner, or Spanish. The nuts shall be clean, mature, fairly free from dry parts of shell, dirt, or other foreign material. The kernels should be free from damage.

Grades:
U.S. Extra Large Virginia
U.S. Medium Virginia
U.S. No. 1 Virginia
U.S. No. 1 Runner
U.S. No. 1 Spanish

Sizes: Virginia Type: Extra-large ($^{3}/_{8}$-inch diameter) not more than 512 per pound.

Medium ($^{9}/_{32}$-inch diameter) 513 to 640 per pound.
U.S. No. 1 Virginia ($^{15}/_{64}$-inch diameter) 641 to 864 per pound.

Runner Type: Larger than $^{16}/_{64}$-inch diameter.

Spanish Type: Larger than $^{15}/_{64}$-inch diameter.

Walnuts

Types: Shelled Walnut Halves. The kernels shall be well dried; free from decay, dark discoloration, rancidity, insects or insect damage; free from damage caused by mold, shriveling, and other means. Walnuts are also available in pieces or small pieces.

Grades:
U.S. No. 1
U.S. Commercial

Sizes: Specify shelled walnut halves consisting of 85 percent or more of half kernels and the remaining 15 percent may be three-fourths kernels, one-half kernels or pieces. *or* Specify walnut pieces or small pieces.

Pickles Products

Purchase Units: Gallon jars, 4 gallons per case

Chow Chow may be either sour or sweet-type pickles seasoned with prepared mustard.

Pickle Mixes may be sour-mixed, sweet-mixed, sour-chow chow, or sweet-chow pickles and must contain: cucumbers 60 to 80 percent, cauliflower 10 to 30 percent, and onions (not over $1^{1}/_{4}$ inch in diameter) 5 to 12 percent. Red peppers or pimentos are optional.

Sour or Sweet Pickle Relish is a finely chopped mixture composed of cucumber 60 to 100 percent, cauliflower (optional) 10 to 30 percent, onions (optional) 5 to 12 percent, green tomatoes (optional) not to exceed 10 percent when used in lieu of equal

quantities of cauliflower, red peppers, or pimentos (optional). The peppers used are the sweet type. If the term "hot" appears on the label, chopped red pepper pods have been added.

Salad Dressings

Purchase units: Gallon jars, 4 gallons per case

Mayonnaise is the emulsified semi-solid food prepared from edible vegetable oil, acid (vinegar, lemon or lime juice), whole egg or egg yolks, and seasonings (salt, sugar, mustard, etc.) The finished product must contain not less than 65 percent vegetable oil.

Federal Standards of Identity: Code of Federal Regulations, Food and Drugs, 21, Part: 25.1

Salad Dressing is the emulsified semi-solid food prepared from edible vegetable oil, acid (vinegar, lemon or lime juice), whole eggs or egg yolks, and a food starch and seasonings such as salt, sugar, mustard, etc. The finished product must contain not less than 30 percent vegetable oil and not less than 4 percent egg yolk.

Federal Standards of Identity: Code of Federal Regulations, Food and Drugs, 21, Part: 25.3

French Dressing is an emulsified fluid food made with edible vegetable oil, acid (vinegar, lemon or lime juice) and seasonings such as tomato paste or salt, sugar, mustard, etc. An emulsifying ingredient may be added. The finished product must contain not less than 35 percent vegetable oil.

Federal Standards of Identity: Code of Federal Regulations, Food and Drugs, 21, Part: 25.2

Sugar

Form: *White, granulated sugar* is made from both cane and beets. The sugar crystals range from coarse to fine.

Purchase Units:
5-pound packages, 12 packages per case
50- and 100-pound sacks

Form: *White, powdered (confectioners) sugar* is ground sugars. The size of the particle is indicated by an X. XX is standard powdered sugar.

Purchase Units:
1-pound boxes, 24 boxes per case
50- and 100-pound sacks

Form: *Brown sugar,* both light and dark is usually made from cane sugars and gets its color from molasses, ash or minerals, and other impurities.

Purchase Units:
1-pound boxes, 24 per case
50-pound sacks

All sugars should be of a high commercial quality that meet Federal requirements. The finished product should contain no lumps larger than 1/2 inch in diameter that cannot be broken by light finger pressure.

Federal Specification Number: JJJ–S–791

Sirup, Table

Purchase Units:
Quart or gallon jars
Number 10 cans, 6 cans per case

Blended Corn and Refiner's Sirup shall be formulated from not less than 10 percent and nor more than 20 percent (solids basis) of fancy grade refiner's sirup blend with corn sirup. The finished product shall be not less than 72° Brix.

Blended Sugar and Maple Sirup shall be formulated from not less than 15 percent nor more than 25 percent (solids basis) of maple sap sirup or maple sugar sirup of at least 66° Brix solids and the balance of granulated sugar sirup. The finished product shall be not less than 66° Brix.

Sugarcane (fancy-sulfured) Sirup shall be formulated from the juice of the sugarcane or by the solution of sugarcane concentrate without the removal of any of the sugar. The product shall have a Brix solids content of not less than 74°. Total sugars (sucrose plus reducing sugars) shall constitute not less than 88 percent of the solids and sulfated ash shall constitute not more than 4.5 percent of the solids. The color shall be no darker than U.S. Color Standard Number 2, as specified in the U.S. Standards for Grades of Sugarcane Sirups.

Federal Specification Number: JJJ–S–351

Honey, Extracted

Purchase Units: 5-pound jars, 6 jars per case

Grade: U.S. Grade A

Color: Light Amber

The product shall have a good flavor for the predominate floral source or, when blended, a good flavor for the blend of floral sources. The honey shall be free of defects and shall be reasonably clear. There shall be no evidence of fermentation, decomposition or other similar conditions. Containers shall be sound and clean.

Federal Specification Number: C–H–571

Molasses, Sugarcane

Purchase Units:
Gallon containers, 4 gallons per case

Grade: U.S. Grade B or better

Sugarcane molasses shall have a reasonably good flavor, reasonably good color and be reasonably free of defects such as harmless extraneous materials which may be in suspension or deposited as sediment in the container.

Federal Specification Number: JJJ–M–576

Cake and Bakery Mixes

Purchase Units:
Pound, 5-, 10-, 25-, and 100-pound sacks

Ingredients: Mixes are blends of flour, sugar, shortening emulsified with mono or diglycerides, dried eggs, salt, leavening agent, milk solids, and flavoring. Ratios of ingredients are varied according to the product, and some of these ingredients may be omitted or others added, depending on what type of product is desired.

No Federal standards exist for cake mixes. It is wise to obtain samples and compare products before purchasing.

Chocolate, Cocoa

Purchase Units: Pound
Chocolate is chocolate liquor made by finely ground cacao nibs. It may also be called baking chocolate, bitter chocolate, cooking chocolate, chocolate coating, or bitter chocolate coating. It must contain 50 to 58 percent cacao fat. It may contain optional ingredients, such as ground spices, vanilla, butter, milk fat, and malt cereal, but for food facilities plain chocolate is usually specified.

Federal Specification Number: JJJ–C–271

Breakfast cocoa is chocolate with some fat removed and in powdered form. Breakfast cocoa contains not less than 22 percent cacao fat.

Cocoa is chocolate with 10-22 percent cacao fat and is in powdered form.

Lowfat cocoa is chocolate with less than 10 percent cacao fat and is in powdered form.

Federal Specification Number: JJJ–C–501

Federal Standards of Identity: Code of Federal Regulations, 21, Food and Drug, Parts: 14.1, 14.2, 14.3, 14.4, 14.5.

Gelatin

Purchase Units: Pound

Description: Gelatin is made by changing the connective tissue collagen in animal tissues to gelatin.

Quality: Quality is measured by the bloom. Bloom refers to the appearance, sheen, and feeling of softness in texture that is evident.

Types: *Unflavored gelatin* should be flavorless and odorless with no objectional flavors evident from manufacturing, fermentation, bacterial action, or other causes. Time of setting, quality of the gel formed, and the quality of the finished product should be that of the high quality gelatin and should display no weakness of gel, no wateriness, little or no opacity. The color may be a very delicate light buff. Unflavored gelatin of good quality has bloom strength of 225 grams.

Flavored gelatin contains sugar, acid, coloring, preserving stabilizer, salt, and flavoring substances. Only approved coloring matter and flavoring ingredients may be used. Flavor is usually one of the main factors affecting gelatin dessert quality outside of gelatin, and this factor is most difficult to define. Natural flavors may be specified as acceptable for some. Artificial flavors also may be used. Purchase is best on the basis of traditional satisfaction and high standards of production. Flavored gelatin of good quality has bloom strength of 60 grams.

Note: Gelatins unflavored or flavored should not be purchased without first making up samples from carefully followed directions. Samples of the various brands should be compared for flavor, color, and texture.

Soup Mixes, Prepared Gravy Bases

Purchase Units: Pound

Types:
Beef-based Products
Chicken-based Products

Ingredients: All materials used should be of good grade. They should be prepared under sanitary conditions in accordance with the regulations of both Federal and State departments of public health. The protein constituent must be derived from any one or a combination of the following: hydrolyzed plant protein, monsodium glutamate, beef or chicken extract, beef or chicken fat, caramel coloring, and other ingredients. The product must be noncaking and must readily dissolve in hot water. When reconstituted, the product must have the suitable flavor and appearance of bouillon. Products

containing seasoning agents whose prominence materially affects the basic flavor of beef or chicken are not acceptable. Before purchasing prepared mixes, the buyer should compare labor costs with the higher cost of prepared mixes.

Note: Federal Specifications for soup mixes and gravy bases do not exist. Some mixes and bases are high in salt and other seasonings and low in meat extractives. It is wise to obtain samples and compare products before purchasing. Read labels to find out what the products contain.

Yeast

Purchase Units: Pound

Forms: *Fresh compressed yeast* should be a creamy white or light-tan color, with a slight gray color evident. The product should be moist, not slimy, and should crumble easily.

Active dry yeast is in granular form. It reacts as quickly in baking as compressed yeast.

FOOD PURCHASING POINTERS

for

School Food Service

Appendix

125 Glossary of Terms
127 Meat Purchase Specifications
128 How to Contact USDA About Meat Acceptance Service
129 Beef Chart
130 Lamb Chart
131 Pork Chart
132 Veal Chart
133 Poultry and Egg Information
134 Dried Egg Products
135 Acceptable Bread and Bread Products
136 Bibliography

Glossary of Terms

Part I

Bid. An offer to perform in accordance with the specifications and conditions for a stipulated price.

Bid Schedule. A timetable for issuing invitations to bid, receiving bids, accepting bids, and awarding contracts for goods or services.

Broker. An individual hired to act as an agent or intermediary in making contracts or sales.

Contract. A bid which has been accepted and awarded to the lowest responsible bidder meeting specifications.

Delivery Order. A purchase order placed against an awarded contract.

Invitation to Bid. An announcement to the commercial community that an opportunity exists for the submission of bids for specific items advertised.

Invoice. A formal statement from the supplier to the purchaser listing the amount due and terms of payment for supplies delivered.

Jobber. An individual who buys foods in quantity from processors and then sells to institutions such as schools.

Market Order. A requisition from a production unit (a school, central kitchen) stating the quantity of foods or supplies to be purchased.

Perpetual Inventory. A continuing record of food purchased, in storage, and used.

Physical Inventory. A periodic physical count of all items in the storeroom or warehouse.

Purchasing Agent. Any individual who is officially designated by the school system or board to contract for necessary supplies, including food, equipment, and services.

Purchase Order. A summary of market orders from individual schools, or production units, etc., specifying the quantity and quality specifications for each item needed, as well as the desired date of delivery.

Quotation. An informal notice by a vendor to the purchaser of conditions and prices under which the former will furnish certain foods, equipment, supplies, or services.

Responsive Bidder. A vendor who is qualified by experience and equipped to perform work required or furnish necessary material indicated in the specifications and who has the necessary financial backing and ability to complete the contract.

Specification. A description of food, equipment, supplies, or services which set forth in a clear and concise manner the characteristics of the items to be purchased and the conditions under which the purchase will be made.

Vendor. A possible or potential supplier of the items listed on a purchase order or indicated in a specification.

Warehouse. A central storehouse for foods, supplies, and equipment, or a section of a school building set aside as a storeroom.

Part II

Bloom Test. A test to determine the jelling or jel strength of gelatin.

Brix. Degrees of sirup density which represent percentage by weight of sugar in the solution.

Can Black. Iron sulfide deposits, that are black in color, usually resulting from a chemical reaction between the product and tinplate of the can.

Code Marking. Numbers or letters stamped on one end of the can or printed under the label to identify such items as size, date, plant, name, grade, and style of product.

Continuous Inspection. The conduct of inspection and grading services in an approved plant whereby one or more inspectors are present at all times when the plant is in operation to make in-process checks on the preparation, processing, packing, and warehousing of all products under contract, and to assure compliance with sanitary requirements.

Drained Weight. The weight of the product after the liquid packing medium has been allowed to drain 2 minutes.

Enrichment. The addition to a food of one or more vitamins, minerals, or proteins which are naturally present in the food in order to increase the consumption of such nutrients.

Emulsifier. A substance that aids in the conversion into an emulsion, such as in a mixture of oil and water.

Ergot. A disease growth (hard, reddish-brown or black masses) that replace the kernels of cereal plants.

Fortification. The addition to a food of one or more vitamins, minerals, or proteins not naturally present in the food in order to increase the consumption of such nutrients. Examples are the addition of vitamin D to milk or iodine to salt.

Heavy Pack. A style of pack which contains more fruit and less liquid than the average pack.

Homogenize. A process under which fat particles in milk are finely divided and emulsified so that the cream (fat) does not separate on standing.

Intrastate. Within a State of the United States.

Interstate. Between or among States of the United States.

Lot Inspection. The inspection and grading of specific lots of processed fruits and vegetables

which are located in warehouses, rail cars, trucks, or any other conveyance or storage facility.

Net Weight. The weight of a product and its packing medium, exclusive of its container.

Oxidized. Discolored product resulting from exposure to the air.

Pack Certification. The conduct of inspection and grading services in an approved plant whereby one or more inspectors may make in-process checks on the preparation and processing of products under contract. The inspectors are not required to be present at all times the plant is in operation.

Packing Media. The liquid (sirup, water solutions with small amounts of salt or sugar, etc.) in which a product is packed. Dry sugar is also a packing medium for frozen fruits.

Pasteurize. A method of destroying disease-producing bacteria in milk by heating to a prescribed temperature for a specific period of time.

Primal. As referred to meat cuts, the most important or primary cuts.

Russeting. A brownish roughened area on the skin of a fruit caused by injury.

Sloughing. The shedding or roughening of the outer tissue layer of a vegetable, particularly green beans. Usually the result of exposure to excessive temperatures during processing.

Sirup Density. See Brix.

Solid Pack. A style of pack which has no liquid added to the product for processing.

Specific Gravity. The ratio of the density of a product to the density of pure water when both are obtained by weighing in air.

Tartrate Crystals. Clear and transparent crystals formed from tartaric acid.

U.S. Fruit and Vegetable Grade Standards. A standard which measures the quality of fruits and vegetables.

Vacuum Dehydration. The process of removal of 95 to 98 percent of the moisture from a product by a combination of low-heat and vacuum.

Viscosity. The property of a fluid which makes it resist a tendency to flow.

Meat Purchase Specifications

Copies of Institutional Meat Purchase Specifications (IMPS) are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, as follows:

Institutional Meat Purchase Specifications (IMPS) General Requirements.
IMPS for Fresh Beef.
IMPS for Fresh Lamb and Mutton
IMPS for Fresh Veal and Calf.
IMPS for Fresh Pork.
IMPS for Cured, Cured and Smoked, and Fully-Cooked Pork Products.
IMPS for Cured, Dried, and Smoked Beef Products.
IMPS for Edible By-Products.
IMPS for Sausage Products.

Specifications for Use

The following is a partial listing of items appearing in the IMP Specifications.

Fresh Beef

Item No.	Product
100	Carcass
107	Rib, Oven-Prepared
108	Rib, Oven-Prepared, Boneless and Tied
109	Rib, Ready Roast
111	Spencer Roll
112	Ribeye Roll
113	Square-Cut Chuck
114	Shoulder Clod
115	Square-Cut Chuck, Boneless
116	Square-Cut Chuck, Boneless, Clod Out
116A	Chuck Roll
120	Brisket, Boneless, Deckle Off
123	Short Ribs
134	Beef Bones
135	Diced Beef
135A	Beef for Stewing
136	Ground Beef, Regular
136A	Ground Beef, Regular, TVP Added
137	Ground Beef, Special
155	Hindquarter
156	Hindquarter, Trimmed
158	Round (Rump and Shank On) Primal
159	Round, Boneless
163	Round, Shank Off, 3-Way Boneless
166	Round, Rump and Shank Off, Boneless, Tied
167	Knuckle
168	Top (Inside), Round
170	Bottom (Gooseneck) Round
175	Strip Loin
176	Strip Loin, Boneless
179	Strip Loin, Short Cut
185	Bottom Sirloin Butt
193	Flank Steak
1100	Cubed Steaks
1101	Cubed Steaks, Special
1102	Braising Steaks, Swiss
1136	Ground Beef Patties, Regular
1136A	Ground Beef Patties, Regular, TVP Added
1137	Ground Beef Patties, Special

Cured, Dried, and Smoked Beef Products

Item No.	Product
601	Brisket, Boneless, Deckle Off, Corned
619	Sliced Dried Beef

Fresh Lamb and Mutton

Item No.	Product
206	Chucks (Double)
207	Square-Cut Shoulders (Double)
208	Square-Cut Shoulders, Boneless
232	Loin, Trimmed (Double)
233	Leg (Double)
234	Leg, Oven-Prepared
1295	Lamb for Stewing
1296	Ground Lamb
1296A	Ground Lamb Patties

Fresh Veal and Calf

Item No.	Product
308	Chucks, 4 Ribs (Double)
309	Square-Cut Chucks, 4 Ribs (Double)
310	Shoulder Clod
311	Square-Cut Chuck, 4 Ribs, Clod Out, Boneless
331	Loin, 2 Ribs (Double)
332	Loin, 2 Ribs, Trimmed (Double)
336	Leg, Shank Off, Oven-Prepared, Boneless
337	Hindshank
1300	Cubed Steaks
1395	Veal for Stewing
1396	Ground Veal

Fresh Pork

Item No.	Product
401	Ham, Regular
402	Ham, Skinned
403	Shoulder
404	Shoulder, Skinned
405	Shoulder, Picnic
406	Boston Butt
407	Shoulder Butt, Boneless
410	Loin
411	Loin, Bladeless
412	Loin, Center Cut
415	Tenderloin
416	Spareribs
417	Shoulder Hock
1400	Filets
1407	Shoulder Butt Steaks, Boneless
1411	Chops, Bladeless
1412	Chops, Center Cut

1412B	Chops, Center Cut, Boneless
1413	Chops, Boneless
1495	Pork for Chop Suey
1496	Ground Pork
1496A	Ground Pork Patties

Cured or Cured and Smoked and Fully Cooked Pork Products

Item No.	Product
503	Ham, Skinned (Cured and Smoked)
505	Ham, Sknls. (Cured and Smoked) Completely Boneless
507	Ham, Bnls., Sknls. (Cured and Smoked) Fully-Cooked, Dry Heat
508	Ham, Bnls., Sknls. (Cured) Processed, Fully-Cooked, Moist Heat
526	Shoulder, Picnic (Cured and Smoked)
530	Shoulder Butt, Boneless (Cured and Smoked)
537	Bacon, Slab (Cured and Smoked) Sknls.
539	Bacon, Sliced (Cured and Smoked) Sknls.
541	Bacon, Sliced (Cured and Smoked) End Pieces
546	Loin, Bladeless (Cured and Smoked)
556	Jowl Squares (Cured and Smoked)
561	Hocks, Shoulder (Cured and Smoked)

Sausage Products

Item No.	Product
800	Frankfurters
801	Bologna
802	Pork Sausage
803	Liver Sausage
804	Cooked Salami
805	Minced Luncheon Meat
810	Breakfast Sausage
813	Polish Sausage
814	Meat Loaves
815	Meat Food Product Loaves

Edible By-Products

Item No.	Product
701	Beef Liver
702	Beef Liver, Sliced (Frozen)
703	Beef Liver, Portion-Cut (Frozen)
710	Pork Liver

How to Contact USDA About Meat Acceptance Service

Listed below are the locations and telephone numbers of Main Station Supervisors for the Agricultural Marketing Service Meat Grading Branch. If you wish to use the Meat Acceptance Service, or have any questions, the meat grading supervisor nearest your location will be glad to help you. Questions may be directed to:

Meat Grading Branch
Livestock Division
Agricultural Marketing Service
U.S. Department of Agriculture
Washington, D.C. 20250

1718 Peachtree Street, N.W. Rm. 204
Atlanta, Georgia 30308
Tel: 404/526–5159

4101 South Halsted Street, Rm. 203
Chicago, Illinois 60609
Tel: 312/353–5751

206 Livestock Exchange Bldg.
Denver, Colorado 80216
Tel: 303/837-4088

760 Livestock Exchange Bldg.
Kansas City, Missouri 64102
Tel: 816/374-5331

4747 Eastern Avenue, Bldg. 7, Sec. A
Los Angeles (Bell), California 90201
Tel: 213/688-5634

P.O. Box 9175
3000 East Third Street
Amarillo, Texas 79105
Tel: 806/376-2264

609 Livestock Exchange Bldg.
Omaha, Nebraska 68107
Tel: 402/221-4635

630 Sansome Street, Rm. 745
San Francisco, California 94111
Tel: 415/556-5815

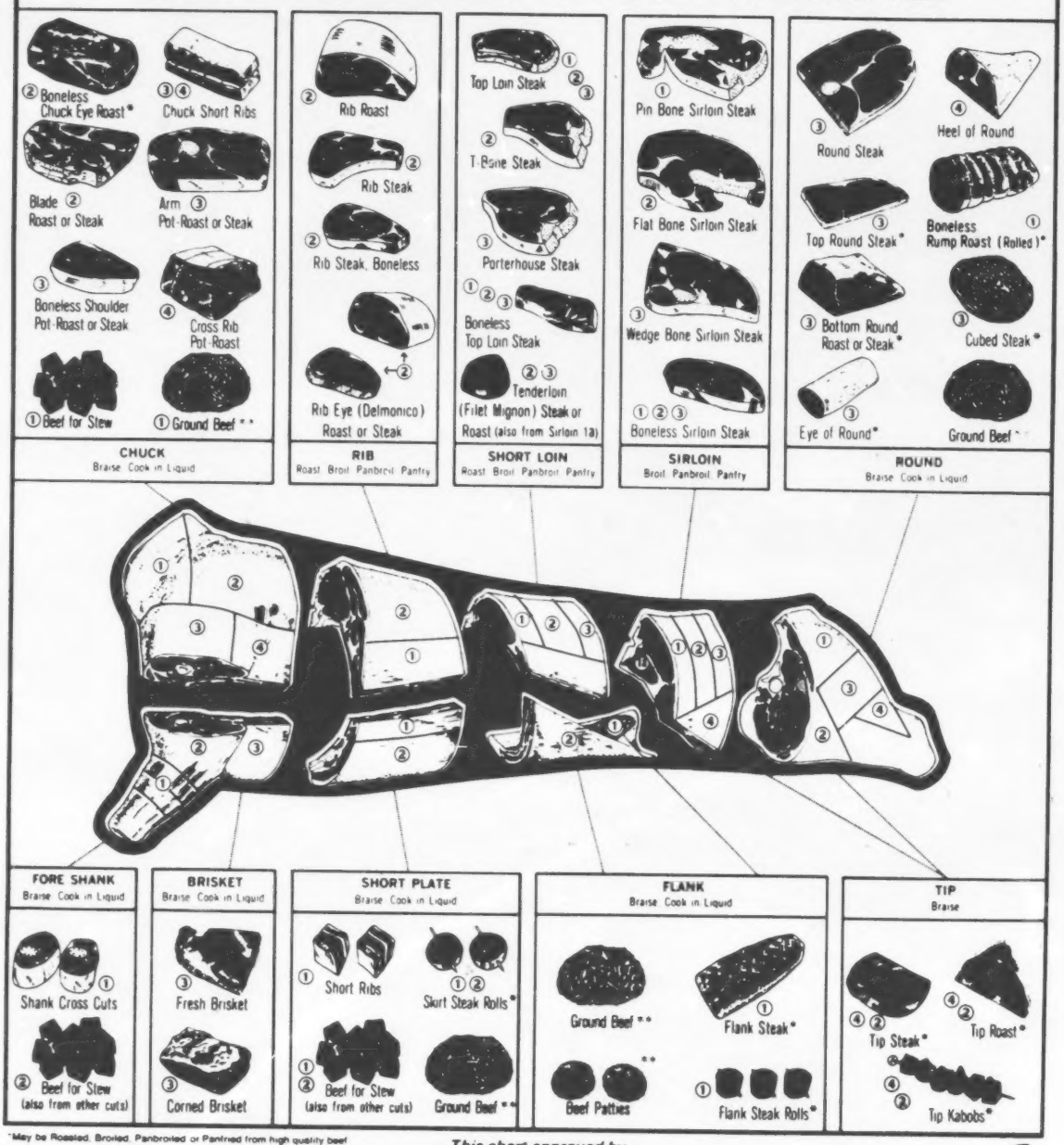
225 Livestock Exchange Bldg.
Sioux City, Iowa 51107
Tel: 712/252-0259

Post Office Building, Box 27
So. St. Paul, Minnesota 55075
Tel: 612/725-7161

970 Broad Street, Room 901
Newark, New Jersey 07102
Tel: 201/645-3950

BEEF CHART

RETAIL CUTS OF BEEF — WHERE THEY COME FROM AND HOW TO COOK THEM



*May be Roasted, Broiled, Panbroiled or Panfried from high quality beef

**May be Roasted, (Baked), Broiled, Panbroiled or Panfried

This chart approved by
National Live Stock and Meat Board

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LAMB CHART

RETAIL CUTS OF LAMB — WHERE THEY COME FROM AND HOW TO COOK THEM

* Lamb for stew or grinding may be made from any cut.

**Kabobs or cube steaks may be made from any thick solid piece of boneless Lamb

This chart approved by
National Live Stock and Meat Board

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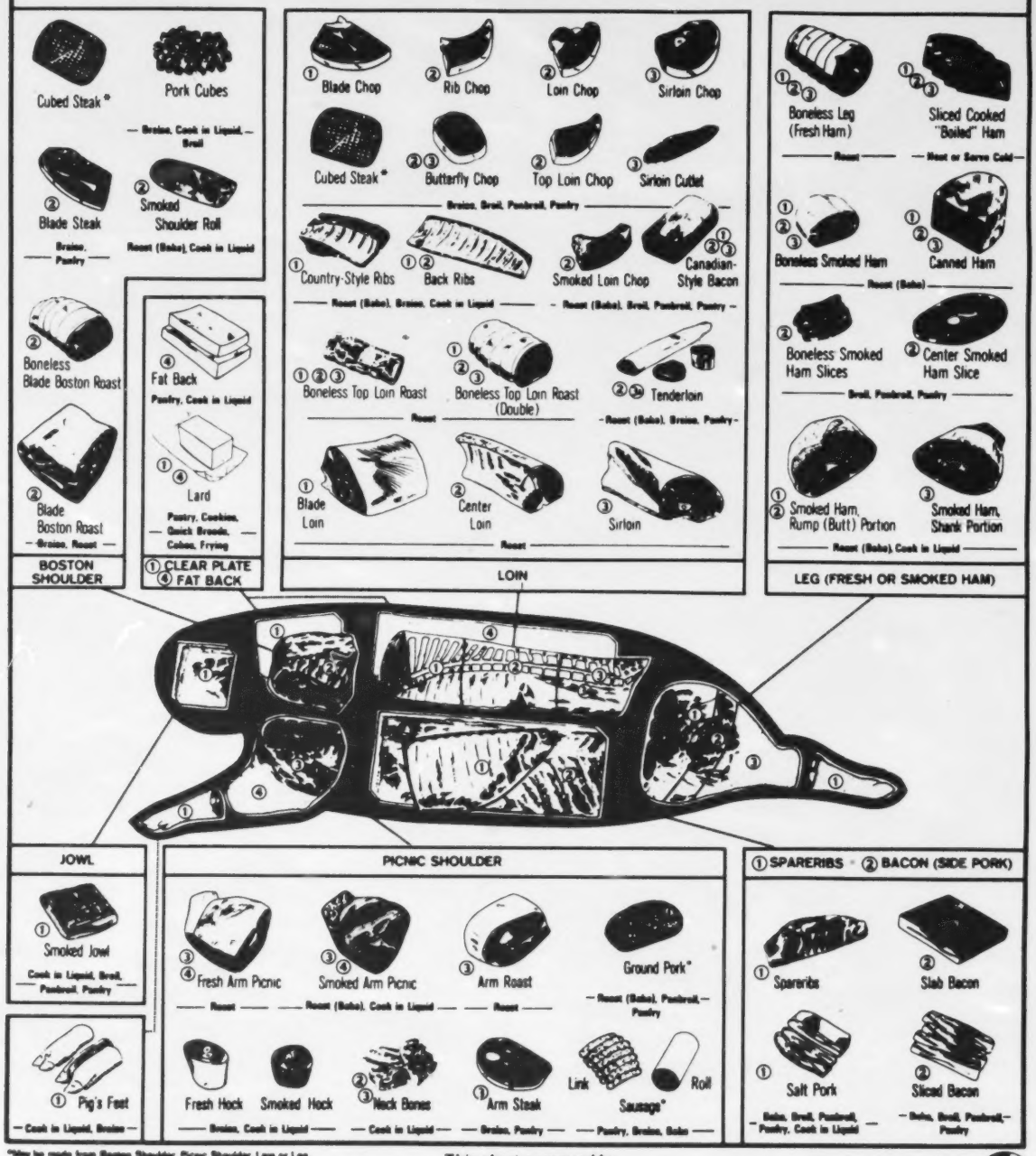
PORK CHART

RETAIL CUTS OF PORK — WHERE THEY COME FROM AND HOW TO COOK THEM



*May be made from Boston Shoulder, Picnic Shoulder, Loin or Leg.

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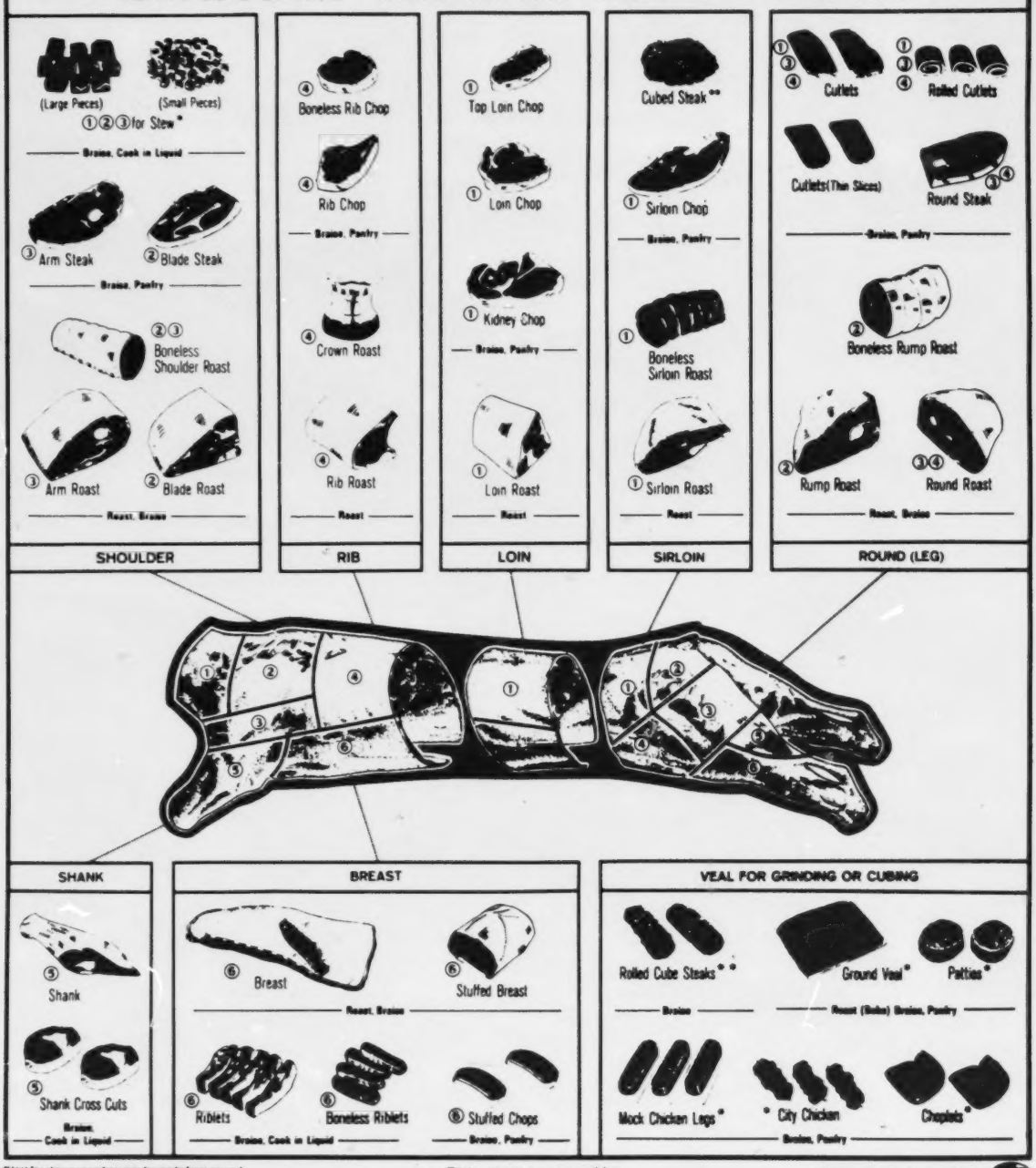
VEAL CHART

RETAIL CUTS OF VEAL — WHERE THEY COME FROM AND HOW TO COOK THEM



*Veal for stew or grinding may be made from any cut

**Cube steaks may be made from any thick solid piece of boneless veal

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Poultry and Egg Information

Requests for information on poultry and egg standards and grades and egg product inspection should be made to nearest regional office of U.S. Department of Agriculture's Agricultural Marketing Service.

Philadelphia Region

Regional Poultry Grading Office
1006 U.S. Custom House, Second and Chestnut Street
Philadelphia, Pennsylvania 19106
Telephone: 215/597–4554

Connecticut	New York
Delaware	North Carolina
District of Columbia	Pennsylvania
Florida	Puerto Rico
Georgia	Rhode Island
Maine	South Carolina
Maryland	Vermont
Massachusetts	Virgin Islands
New Hampshire	Virginia
New Jersey	West Virginia

Chicago Region

Regional Poultry Grading Office
Room 803, U.S. Custom House
610 South Canal Street
Chicago, Illinois 60607
Telephone: 312/353–6226

Alabama	Michigan
Arkansas	Mississippi
Illinois	Ohio
Indiana	Tennessee
Kentucky	Wisconsin
Louisiana	

San Francisco Region

Regional Poultry Grading Office
Room 807, U.S. Appraisers Building
630 Sansome Street
San Francisco, California 94111
Telephone: 415/556–6488

Alaska	Montana
Arizona	Nevada
California	Oregon
Hawaii	Utah
Idaho	Washington

Des Moines Region

Regional Poultry Grading Office
Room 777, New Federal Building
210 Walnut Street
Des Moines, Iowa 50309
Telephone: 515/284–4581

Colorado	New Mexico
Iowa	North Dakota
Kansas	Oklahoma
Minnesota	South Dakota
Missouri	Texas
Nebraska	Wyoming

United States Department of Agriculture
Agricultural Marketing Service
Poultry Division—Washington, D.C. 20250
1976

Dried Egg Products

The companies listed process dried egg products under USDA supervision. For further information, write directly to the companies. It is generally impracticable to give a complete list of processors. In furnishing a partial list, it should be understood that no discrimination is intended and no guarantee of reliability implied.

Note: Some sporting goods stores also sell dried egg products.

Dried Whole Egg and Yolk-Type Products, and Dried Egg Whites

Ballas Egg Products Corp. and/or Ballas Egg Solids Div., 40 North 2nd Street, Zanesville, Ohio 43701
Commercial Creamery Co. and/or Medo-Maid Foods, S. 159 Cedar Street, Spokane, Washington 99204
Cutler Dairy Products, Inc., 612–42 W. Sedgley Ave., Philadelphia, Pennsylvania 19140
Cutler Dairy Products, Abbeville, Alabama 36310
Henningsen Foods, Inc., Drawer A, Malvern, Iowa 51551
Henningsen Foods, Inc., 325 3rd Street, David City, Nebraska 68632
Henningsen Foods, Inc., 200 Railway Street, Ravenna, Nebraska 68869
Marshall Produce Co., P.O. Box 455, Marshall, Minnesota 56258
Marshall Produce Co., 213 N. Hiawatha, Pipestone, Minnesota 56164
Mid-Central Egg Products, Inc., 111 S. 10th Street, Hiawatha, Kansas 66434
Monark Egg Corp. and/or Monark Egg Products, Inc., 601–611 E. 3rd Street, Kansas City, Missouri 64106
National Egg Products Corp., P.O. Box 475, Social Circle, Georgia 30279
Oskaloosa Produce Co. and/or Oskaloosa Food Products Corp., 546 9th Ave., East, Oskaloosa, Iowa 52577
Papetti's Hygrade Egg Products, P.O. Box 1045, Cullman, Alabama 35055
Pietrus Foods, Inc., 5th Ave., NE, Sleepy Eye, Minnesota 56085
Roberts Dairy Company, 220 S. 20th Street, Lincoln, Nebraska 68510
Seymour Foods, Inc., 101 N. Kansas Avenue, Topeka, Kansas 66601
Sonstegard Foods, Inc., P.O. Box 359, Howard Lake, Minnesota 55349
Tharp Brothers, Route #1, Pangburn, Arkansas 72121
Tranin Egg Products Co., P.O. Box 3489, Jackson, Mississippi 39207
Milton G. Waldbaum Co., and/or Wakefield Dried Foods, Inc., 501 N. Main Street, Wakefield, Nebraska 68784
Wenk Produce Company, 121 S.E. Second Street, Madison, South Dakota 57042

Dried Egg Whites Only

Julius Goldman's Egg City, 8643 Shekell Road, Moorpark, California 93021
Henningsen Foods, Inc., 402 N. 3rd Street, Norfolk, Nebraska 68701
Kraft Foods, Div. of Kraftco Corp., 123 N. Miami, Marshall, Missouri 65340

Freeze Dried Eggs Only

Freeze Dry Products, Inc., 8th & Ingle Street, Evansville, Indiana 47708

Acceptable Bread and Bread Products

(All products must be made of whole grain or enriched flour or meal)

Group I lists items that weigh at least 25 grams or 0.9 ounces, and contain approximately 35 percent moisture. Group II lists low-moisture items that weigh at least 20 grams or 0.7 ounces, and contain approximately 10 percent moisture. Group III lists miscellaneous items that weigh at least 30 grams or 1.1 ounces, and contain approximately 50 percent moisture.

Group I

When obtaining these items commercially, a serving should have a minimum weight of 25 grams (0.9 ounce).

Item	*Serving size*[1]
Bagels	1 bagel
Biscuits	1 biscuit
Boston Brown Bread	1 serving
Buns (all types)	1 bun
Cornbread	1 serving
Doughnuts (all types)[2]	1 doughnut
English Muffins	1 muffin
French or Vienna Bread[3]	1 serving
"Fry" Bread	1 piece
Italian Bread[3]	1 serving
Muffins	1 muffin
Pretzels, Dutch (soft) Twisted	2 pretzels
Pumpernickel	1 slice
Raisin Bread	1 slice
Rolls (all types)	1 roll
Rye Bread	1 slice
Salt Sticks	1 stick
Stuffing (Bread)[4]	1 serving
Sweet Rolls[2]	1 roll
Syrian Bread (flat)[3]	1 section
White Bread	1 slice
Whole Wheat Bread	1 slice

Group II

When obtaining these items commercially, a serving should have a minimum weight of 20 grams (0.7 ounce).

Item	*Serving size*[1]
Bread Sticks (dry)	3 sticks
Graham Crackers	3 crackers
Melba Toast	5 pieces
"Pilot" Bread	2 pieces
Rye Wafers (whole-grain)	4 wafers
Saltine Crackers	8 crackers
Soda Crackers	3 crackers
Taco Shells	2 shells
Zwieback	3 pieces

Group III

When obtaining these items commercially, a serving should have a minimum weight of 30 grams (1.1 ounces).

Item	*Serving Size*[1]
Dumplings	1 dumpling
Hush Puppies	1 serving
Meat or Meat Alternate Pie Crust	1 serving
Meat or Meat Alternate Turnover Crust	1 serving
Pancakes	1 pancake
Pizza Crust	1 serving
Popovers	1 popover
Sopapillas	1 serving
Spoonbread	1 serving
Tortillas	2 tortillas
Waffles	1 serving

Note: To determine serving sizes for products made at schools, refer to "Cereal products" in PA-631, "Quantity Recipes for Type A School Lunches".

[1] The number of items per portion are approximate amounts. Additional quantities may be needed to provide the appropriate weight for this group depending on the size of the item used.

[2] To be allowed as a bread item in breakfasts and supplement (snacks) only.

[3] Denotes commercially prepared products often made with unenriched flour. Check label or manufacturer to be sure product purchased is made with enriched flour.

[4] Bread in a serving of stuffing should weigh at least 25 grams (0.9 ounce).

Bibliography

A Planning Guide for Food Service in Child Care Centers (FNS 64). Washington, D.C.: USDA, 1976. 26 pp.

School Breakfast Menu Planning Guide (FNS 7). Washington, D.C.: USDA, 1976. 10 pp.

A Menu Planning Guide for Type A School Lunches (PA 719). Washington, D.C.: USDA, 1974. 20 pp.

Brokaw, May. "Why Not Cooperative Purchasing?" *School Food Service Journal*, 26:6, pp. 32–35, June, 1972.

The Buying Guide for Fresh Fruits, Vegetables and Nuts. Fullerton, California: Blue Goose Inc. 1971. 124 pp.

Canned Food Tables (6th Edition). Washington, D.C.: Natl. Canners Association. 1968.

Cronan, Marion L. *The School Lunch*. Peoria, Illinois: Charles A. Bennett Co., 1962. 512 pp.

Eshbach, C. E. and A. L. Wrisley. *Purchasing Food for Food Service Establishments, Food Management Leaflet 10*. Amherst, Mass.: Cooperative Extension Service, College of Agriculture, University of Massachusetts, 1965. 20 pp.

Federal and State Standards for the Composition of Milk Products (and Certain Non-Milkfat Products) (Agriculture Handbook No. 51). Washington, D.C.: USDA, 1974. 27 pp.

Flanagan, Thelma. *School Food Purchasing Guide*. Chicago, Illinois: American School Food Service Association; Association of School Business Officials. 1968. 144 pp.

Food Buying Guide for Type A School Lunches (PA-270). Washington, D.C.: USDA, 1972. 92 pp.

Food Purchasing: A Course for School Food Service Personnel. Sacramento, California: California State Department of Education, 1970. 78 pp.

Food Purchasing. Atlanta, Georgia: Department of Education, Office of School Administrative Services, School Food Service Unit, n.d. 63 pp.

Food Procurement for School Food Service: Instructor's Guide. Raleigh, North Carolina: Department of Public Instruction; North Carolina Department of Community Colleges, 1970. 111 pp.

Food Service Manual for Health Care Institutions. Chicago, Illinois: American Hospital Association, 1972. 305 pp.

Food Storage Guide for Schools and Institutions (PA 403). Washington, D.C.: USDA, 1975. 33 pp.

Grover, R. M. and C. E. Eshbach. *Purchasing Eggs for Food Service Establishments, Food Management Leaflet 17*. Amherst, Mass.: Cooperative Extension Service, College of Agriculture, University of Massachusetts, 1968. 20 pp.

Hayes, K. M., C. E. Eshbach, F. M. Sawyer and N. G. Cournoyer. *Frozen Food in Food Service Establishments, Food Management Leaflet 2*. Amherst, Mass.: Cooperative Extension Service, College of Agriculture, University of Massachusetts, 1970. 23 pp.

"Help for School Lunch Managers." *School Lunch Journal*, 24:1, pp. 32–33, January, 1970.

Kotschevar, Lendal H. *Quantity Food Purchasing*. New York, New York: John Wiley and Sons, 1961. 619 pp.

Lukowski, R. E. *Purchasing Canned Fruits and Vegetables for Food Service Establishments, Food Management Leaflet 14*. Amherst, Mass.: Cooperative Extension Service, College of Agriculture, University of Massachusetts, 1966. 20 pp.

"Market Category: School Lunch." *School Foodservice Journal*, 35:7, pp. 34–53, July, 1973.

Miesel, G. E. "What's in the Can?" *School Foodservice Journal*, 26:6, pp. 32–35, June, 1972.

Purchasing. Atlanta, Georgia: Department of Education, Office of School Administrative Services, School Food Services Unit, n.d. 118 pp.

Potter, F. E. *Purchasing Dairy Products for Food Service Establishments, Food Management Leaflet 15*. Amherst, Mass.: Cooperative Extension Service, College of Agriculture, University of Massachusetts, 1970. 20 pp.

Richard, Ruth. "Input Output—The Commissary System." *Institutions/Volume Feeding*, 69:1, pp. 31–38, July, 1971.

West, Bessie Brooks, LeVelle Wood, and Virginia F. Harger. *Food Service in Institutions*, New York, New York: John Wiley and Sons, Inc., 1966. 693 pp.

Wrisley, A. L., E. M. Buck and C. E. Eshbach. *Purchasing Beef for Food Service Establishments, Food Management Leaflet 16*. Amherst, Mass.: Cooperative Extension Service, College of Agriculture, University of Massachusetts, 1966. 31 pp.

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